

ADAPTATION THROUGH FLEXIBILITY: 656 ARMY AIR CORPS
DURING OPERATION CORPORATE

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Art of War Scholars

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ABSTRACT

ADAPTABILITY THROUGH FLEXIBILITY: 656 ARMY AIR CORPS DURING OPERATION CORPORATE, by MAJ Anthony L. Marston, 102 pages.

On the morning of 22 April 1982, the first elements of 656 Army Air Corps (AAC) departed Southampton dock heading south to a small set of islands off the coast of Argentina. With the failed attempts of peace talks between the Argentine and British governments, Operation Corporate went into full effect to liberate the Falkland Islands. The 656 AAC played a major role during the fight from the landings at San Carlos to the capture of Port Stanley. Aviation crews experienced extreme challenges ranging from the Argentine military threat to bad weather conditions. Despite these trials, 656 AAC excelled and proved their worth in the high intensity conflict. This thesis will examine the successful actions of the light helicopter squadron through its preparations and actions in combat. In order to determine why they were so successful in their mission, the thesis will examine what, if any, adaptations were made prior to and during Operation Corporate. It will show that lessons gleaned from their support of Operation Agila in Rhodesia and multiple other smaller missions adjusted the squadron's operations. Adaptations after notification of Observation Post (OP) Corporate and during the conflict will also be examined.

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ACRONYMS

AAC	Army Air Corps
CASEVAC	Casualty Evacuation
CBAS	Commando Brigade Air Squadron
CMG	Commonwealth Monitoring Group
LFFI	Land Forces Falkland Islands
Lt Hel	Light Helicopter
MOD	Ministry of Defense
NVG	Night Vision Goggles
OP	Observation Post
SO	Staff Officer
RAF	Royal Air Force
REME	Royal Electric and Mechanical Engineers
RhAF	Rhodesian Air Force

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CHAPTER 1

INTRODUCTION

During one of our sorties, Captain Greenhalgh with Lance Corporal Gammon came face to face with a Mirage, outmaneuvered it, then proceeded to give chase. Unfortunately, the Scout just could not keep up.

—Scout Flight 656 Squadron AAC, Commanders Diary Narrative

The SS *Monarch of Bermuda* sat docked at the mouth of the Mersey. Originally a luxury cruise liner destined for the Caribbean with numerous honeymooners ready to begin their new life, it was now used for a less glamorous purpose with men on no less of a life changing experience.¹ After 24 hours of loading personnel and materiel on board, the ship joined a growing convoy at Clyde and set sail for Suez on 16 August 1944.² The world passed by tranquilly with the occasional depth charge or eruption of gunfire into the sky at German scout aircraft disrupting the peace.³ Few on board knew what they could expect when they reached the destination or the challenges they faced. One of them was Captain Rex Boys, a member of the 656 Air Observation Post (OP) Squadron Royal Air Force (RAF). Once the 656 reached its ultimate destination of Burma, Rex was one of the first to fly a sortie in their new area of operations. Sent on a reconnaissance mission, Boys flew his Auster in a low profile commenting, ‘For the first time, I realized

¹The SS *Monarch of Bermuda* and The Queen of Bermuda, <http://member.melbpc.org.au/~nashr/New%20Australia%20page%202.html> (accessed 16 April 2014).

²Guy Warner, *From Auster to Apache: The History of 656 Squadron RAF/AAC 1942-2012* (E. Yorkshire, England: Pen and Sword Aviation, 2013), 10.

³Ibid.

how little one could observe through dense forest, even at low altitude.”⁴ Flying over a village, Japanese soldiers ran out of the huts and fired at his aircraft. Without the ability to return fire or call indirect due to the lack of nearby artillery, Rex attempted to evade. He lost control of the aircraft, crashing after a nearly 500 foot descent.⁵ Local Burmese found him unconscious and smuggled him through Japanese lines back to the British.

Two hundred miles south of the Mersey and almost 38 years later, Captain John Greenhalgh stood at the railing of the *Europic Ferry* as it pulled away from Southampton dock.⁶ Historic in its location as a major embarkation site for British soldiers traveling throughout the world, there were familiar scenes of relatives and loved ones waving from the shore as the ship slowly faded from sight. Just like Boys, Greenhalgh knew little of what his detachment of the 656, now part of the Army Air Corps (AAC), would face. On his first day of sorties in support of the British landings at San Carlos in the Falklands, he observed an Argentine Mirage on an attack heading for his aircraft.⁷ Executing the battle drill for evasion from fixed wing aircraft, Greenhalgh accelerated his rotary wing Scout towards the ground while turning tightly inside of the Mirage’s turn to disrupt his attack path. He said later that, “It worked because he crossed over us with about a 100 foot

⁴Ibid., 17.

⁵Ibid.

⁶John Greenhalgh (COL, UK), *The Falklands War As Seen By Col J. Greenhalgh DFC*, 656 Squadron Association, <http://www.656squadron.org/Recollections/FalklandsWar.html> (accessed 21 September 2013).

⁷John Greenhalgh, COL, UK, *Other Thoughts and Details from J G Greenhalgh, DFC*, 656 Squadron Association, <http://www.656squadron.org/Recollections/FalklandsOther.html> (accessed 21 September 2013).

separation and I could see the pilot so clearly that I almost thought he was going to wave!”⁸

From the beginning of the 656 Squadron’s history in 1942, its aircraft and personnel found themselves in unexpected operating environments.⁹ Whether it was the thick jungles of Burma or the rocky terrain of the Falkland Islands, they experienced challenges requiring adaptation. Based on the professionalism and previous actions of the pilots of the 656, little doubt existed that the aircrews could adapt. As Captain Rex Boys put it during reflection on his shoot down: “I suppose what happened to me was part of the body of experience that led the Squadron to its subsequent successful operations throughout the campaign. It would certainly have been bad for our reputation and our morale to have turned away from danger.”¹⁰ This continued determination of the squadron to face dangers untold in support of the ground soldier pushed them beyond normal limitations and required constant adaptation. Aircrews operated in a complex environment consisting of advanced antiaircraft systems, fixed wing aircraft, and Antarctic winds bringing in less than favorable flying conditions. The urgency of deploying early condensed the planning and training time available to the squadron. Yet, Operation Corporate ultimately succeeded in its task to recapture the islands invaded and the 656 AAC played a large role in this.

⁸Greenhalgh, *Other Thoughts & Details from J G Greenhalgh*.

⁹In the US Army Doctrine Reference Publication 3-0, *Unified Land Operations*, operational environment is defined in the glossary as “a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander.”

¹⁰Warner, *From Auster to Apache*, 17.

Why was 656 AAC successful given the immense odds presented against it during execution? It is useful to examine their actions within the context of British Fighting Power to find a potential answer to this question. For the British military, Fighting Power is defined as providing “the ability to operate and to fight; to engage in combat.”¹¹ While this definition is simple and elegant, the conceptualization of the Fighting Power is more complex. A military’s Fighting Power is to be protected and enhanced during conflict while attempting “to diminish and undermine” an opponent’s ability to operate. As its nature will adapt to the given situation, Fighting Power requires analysis of the context and character of the situation, environment, opponents, the unified action partners, and the culture and history.¹² Opponents and their actions will dictate different approaches and tactics based on the presence or lack of relative advantage. The history of a situation and the culture of those involved in a conflict will also require different approaches. Fighting Power’s need and ability to adapt to the context of conflicts is heavily reliant upon the concept of the moral component.

There are three components to Fighting Power: conceptual, physical, and moral. The conceptual component focuses on the use of doctrine as the basis for a universal understanding of the nature and character of conflict, as well as a common intellectual standard for explaining the interaction of forces within a conflict.¹³ The physical component “provides the means to fight” through the use of manpower, equipment,

¹¹Ministry of Defence, *Army Doctrine Publication (ADP): Operations* (Wiltshire, England: DCDG, 2010), 2-2.

¹²Ministry of Defence, *Joint Doctrine Publication 0-01* 4th ed. (Wiltshire, England: DCDG, 2010), 4-1.

¹³Ministry of Defence, *ADP Operations*, 2-3.

training, sustainability, and capability development.¹⁴ The moral component is the hardest to define as it represents the human element of conflict, providing the potential for the army to operate and fight if the right amount of time and effort are expended.¹⁵ While the least predictable of the components, it takes on an importance that is reflected in Napoleon Bonaparte's famous quote, "In war the moral is to the material (physical) as three is to one."¹⁶

The aim is to ensure the components of Fighting Power work in harmony. This harmony manifests itself in the ability of units to execute mission command, defined as "a philosophy of command, with centralized intent and decentralized execution, that is particularly suitable for complex, dynamic and adversarial situations."¹⁷ Commanders employ the elements of Fighting Power to establish a common frame of reference. Within this framework, mutual trust and a shared understanding help foster an environment in which subordinates are empowered to exercise initiative and innovation within the given commander's intent. Field Marshal Viscount Slim said it best:

This acting without orders, in anticipation of orders, or without waiting for approval, yet always within the overall intention, must become second nature in any form of warfare where formations do not fight closely en cadre, and must go down to the smallest units. It requires in the higher command a corresponding flexibility of mind, confidence in its subordinates, and the power to make its intentions clear right through the force.¹⁸

¹⁴Ibid., 2-31.

¹⁵Ibid., 2-11.

¹⁶Ibid., 2-10.

¹⁷Ibid., 6-11.

¹⁸Field Marshal Viscount Slim, *Defeat into Victory: Battling Japan in Burma and India, 1942-1945* (New York: Cooper Square Press, 2000), 542.

656 AAC members lived this idea on a daily basis. Constant deployments as small detachments meant lower-level leaders received initial guidance and for the most part, operated independently. What enabled the detachment commanders to be successful centered on preparations prior to the deployment. Within the concept of Fighting Power, effective units establish the conceptual and physical aspects prior to actions so that the moral component has the ability to adapt to the environments experienced. The flexibility provided by preparations, planning, and training facilitate the subordinate commander's ability to be innovative and to take the initiative in combat. During Operation Corporate, the 656 AAC staff and commander established the flexibility through a shared understanding of the operational environment (conceptual), the preparation of the personnel and equipment for the tasks they would face (physical), and the decentralization of decisions to the lowest level (moral). This is why they overcame the odds that were presented to them with little hesitation and interruption to the overall operational tempo. Ultimately, the 656 AAC Squadron achieved success during Operation Corporate through their planning, preparation, and organizational culture that provided the flexibility for lower level leaders' adaptation to the changing operating environment.

The Fight for the Undesirable

To understand the background of the conflict and the resulting operational environment, a brief history of the Falkland Islands is necessary. Situated east of Cape Horn, the island's first recorded visitor was British Captain John Strong whose ship

stumbled upon them after a violent storm disrupted the trip to Chile.¹⁹ Search parties exploring the sound between the major west and east islands found fresh water and food in the abundant amount of geese. During this short reconnaissance, the rugged terrain would be noticed, as well as the general lack of trees for firewood. Captain Strong would name the islands after the First Lord of the Admiralty, Lord Falkland.²⁰ This first visit would fuel energy within the political conscious of the British, with many seeing the islands as potential ports for the expansion and maintenance of their naval power. However, the first to actually establish themselves on the island were the French. Antoine de Bougainville, a French nobleman, claimed them in 5 April 1764, establishing a small fort just north of present day Port Stanley.²¹ Bougainville wrote, “a countryside lifeless for want of inhabitants . . . everywhere a weird and melancholy uniformity.”²² This echoed Captain Strong’s observations, as well as numerous others that avoided even landing on the islands based on its appearance. However, the desire for more territory and its implications for projection of power overcame all involved. The British sent Commodore John Byron who established a vegetable patch and a Union Jack on West Falklands at the newly named Port Egmont, unaware of the French settlement on the

¹⁹Max Hastings and Simon Jenkins, *The Battle for the Falklands* (New York: W. W. Norton and Company, 1984), 1.

²⁰*Ibid.*, 2.

²¹*Ibid.*

²²*Ibid.*

other island.²³ The first encounter would occur a year later as Captain John McBride discovered the French at Port Louis, bringing the Falklands to the world stage.²⁴

The Spanish were furious with both for establishing colonies on land that was perceived to be theirs in accordance with the Treaty of Utrecht, signed by all three countries.²⁵ The French transferred Port Louis in 1767 to the Spanish, renaming it Puerto Soledad. In 1769, the Spanish would overwhelm British at Port Egmont with a force numbering five ships and 1,400 men, expelling them from the islands.²⁶ This did not sit well with the British population that saw this as an insult and the threat of war loomed. Negotiations occurred with the Spanish reluctantly agreeing to the British returning to Port Egmont, which one sailor had described as “(t)he most detestable place I was ever at in all my life.”²⁷ The British presence at the port would be short lived as after three additional years, a plaque was stating: “Be it known to all nations that Falkland’s Ysland, with this fort, the storehouses, wharfs . . . are the sole right and property of His Most Sacred Majesty George III, King of Great Britain.”²⁸

With the stirrings of revolution and the desire of independence from Spain occurring around 1810, the Spanish abandoned their Falkland settlements. This left the islands to their own devices, with numerous ships and sailors using Puerto Soledad as a

²³Ibid.

²⁴Ibid., 3.

²⁵Ibid.

²⁶Ibid.

²⁷Ibid.

²⁸Ibid., 4.

fishing and hunting base. Once a new government was established in Buenos Aires, the United Provinces of Rio de la Plata eventually sent Louis Vernet as the new governor to expel those conducting non-state sanctioned activities.²⁹ Vernet would arrest the American ship Harriet, confiscating some of its property and putting the captain on trail in Buenos Aires for illegal sealing.³⁰ The American USS Lexington happened to be in the area and was dispatched to regain the property taken. Under the command of Captain Silas Duncan, the restitution went beyond the sealskins and resulted in the effectual destruction of the Puerto Soledad as territory of Buenos Aires. The British took this opportunity to retake the islands with two warships under the command of Captain James Onslow.³¹ The British would gain full control of the islands in 1833 and maintain this control until 2 April 1982 when Argentina began its invasion.

Chapter Outline

Chapter 2 will examine the squadron's preparation and execution of the 1980 British Operation Agila in Rhodesia. This will establish the basic knowledge base that existed just prior to the Operation Corporate deployment and will establish the major lessons learned. Chapter 3 focuses on the planning and preparation once notification of the impending deployment to the Falkland Islands occurred. Examination of how potential lessons learned from Operation Agila were integrated into the planning occurs here, as well as how preparation potentially provided flexibility in future execution.

²⁹Ibid., 5.

³⁰Ibid.

³¹Ibid.

Chapter 4 focuses on the unit's actions during the fighting on East Falkland. Adaptations required during the missions and how well planning and preparation were able to provide flexibility will be examined. Chapter 5 is the conclusion.

CHAPTER 2

OPERATION AGILA

656 Army Air Corps experienced numerous deployments that shaped their way of conducting operations prior to their participation in Operation Corporate. While primarily ready to support the NATO war plans in the event of Soviet aggression in Western Europe in their priority one mission, numerous priority two missions were executed. A majority required just small contingents of 656 to support missions around the world in places such as Hong Kong, Belize, and Kenya. However, on the night of 15 November 1979 the squadron received a warning order for Operation Agila in Rhodesia.³² Initially only requiring a three Gazelle detachment, planning quickly revealed the need for additional aircrews and aircraft with the rest of the squadron arriving by 6 January 1980.³³ This deployment provides an opportunity to examine both the tactical actions of the individual crews while examining the squadron's overall conduct of the given mission. However, this chapter will focus on whether or not the squadron's planning and preparation provided sufficient flexibility for adaptation during the operation. Higher headquarters military planning prior to the deployment excluded 656 staff planners, preventing them from having a shared understanding of the operational environment with other deploying units or more importantly, the task force commander. This affected the squadron's understanding of the operational reach needed for the desired high operational tempo and came very close to rotary wing operations culminating prior to mission

³²S. R. Nathan, MAJ, UK, "Operation Agila," *Army Air Corps Journal* (1980): 12.

³³*Ibid.*, 13.

accomplishment. 656 independent planning demonstrated flexibility through identifying operational requirements for the massive area of operations, specifically the number of aircrews and aircraft needed. Where planning did not account for sustainment issues of refueling and aircraft maintenance, the professionalism and determination of the squadron members ensured that the mission was successful. This is a reflection of the ability for lower level leaders to take the initiative and innovate when faced with challenges.

Background

Rhodesia, now Zimbabwe, was primarily a private venture of Cecil Rhodes, whose efforts created an environment attractive to individual settlement and investment.³⁴ At his insistence, the British government accepted the country as a colony in 1890 and eventually became a self-governing territory in 1923.³⁵ When Great Britain offered independence to its respective colonies based on the idea of majority rule, the country was unable to develop an agreed upon government structure for the country. With the desire of the minority white population to maintain power, Rhodesian Prime Minister Ian Smith issued the Unilateral Declaration of Independence on 11 November 1965 despite protests from Great Britain.³⁶ Sanctions quickly followed in the form of oil embargos with Prime Minister Harold Wilson telling the House of Commons that there would be no

³⁴Lord Soames, "From Rhodesia to Zimbabwe," *International Affairs (Royal Institute of International Affairs 1944-)* 56, no. 3 (Summer 1980): 405.

³⁵Marino de Boer, "Rhodesia's Approach to Counterinsurgency: A Preference for Killing," *Military Review* (November-December 2011): 35.

³⁶*Ibid.*

independence without majority rule.³⁷ Angry and disenfranchised by the proceedings that kept a majority without a voice, African resistance manifested in political strife and an insurgency carried out primarily through two groups: The Zimbabwe People's Revolutionary Army and the Zimbabwe African National Liberation Army.³⁸ The next 14 years would be defined with extreme violence between these two groups, the Rhodesian Security Forces, and the Rhodesian citizens. During this period, the state's ruthless actions brought world condemnation and numerous sanctions.

In 1979, over 65 percent of the Rhodesian populace voted in government elections which saw for the first time where the majority of positions were filled with the majority race, including the Head of State and the Head of Government.³⁹ The British Government saw this as an opportunity to set the conditions for Rhodesia's establishment as an independent state and the termination of violence. Discussions during the Lancaster House Conference⁴⁰ established the pathway for the country and established an initially shaky ceasefire between all groups.⁴¹ This gave way to Operation Agila, which primarily focused on the establishment of the ceasefire and the reintegration of the insurgents back

³⁷House of Commons, "Mr Wilson announces in House of Commons that no Independence for Rhodesia before African majority rule," Debate 20 December 1966 vol 738 cc1175-83, <http://hansard.millbanksystems.com/commons/1966/dec/20/rhodesia> (accessed 7 May 2014).

³⁸Boer, 35.

³⁹Lord Soames, 406.

⁴⁰The Lancaster House Conference was a meeting involving Rhodesian government leadership, leaders of the Patriotic Front, and the British government to discuss the framework and path towards a Rhodesian independence constitution.

⁴¹Lord Soames, 410.

into the Rhodesian population. A Commonwealth Monitoring Group (CMG) was established to oversee the operation as the Land Forces Component Command and planning commenced.

Planning

Upon reception of the warning order for Operation Agila, Major S. R. Nathan, Commander of 656 AAC, and his staff began preparation for the operation. At the time, the squadron consisted of a headquarters section, a Scout company of six Scout aircraft, a Gazelle company of six newly gained Gazelle aircraft, and the Royal Electric and Mechanical Engineers (REME) Maintenance Company. Each flight company could divide into separate self-contained detachments, often consisting of three aircraft with the required aircrews and maintenance support.

Despite the squadron's efforts, planning essentially occurred in isolation. The CMG, the United Kingdom Land Forces (UKLF), and the Ministry of Defense (MOD) headquarters all neglected to include 656 AAC in any planning meetings. Because the leadership felt that the RAF staff would be able to represent the concerns of army aviation despite having different aircraft and organizational designs.⁴² The squadron was also left out of a reconnaissance party that happened prior to the deployment.⁴³ Despite the reconnaissance party being authorized only four personnel, a request for concerns or items from the 656 staff to verify during the reconnaissance would have greatly aided in at least identifying the potential frictions points that would occur during the initial

⁴²S. R. Nathan, MAJ, UK, Operation 'Agila' 1979-1980: 656 Squadron AAC Report (Museum of Army Flying, Middle Wallop, England, 25 April 1980), 2.

⁴³Ibid.

operations. The assumption that the AAC represented a smaller version of the RAF remained through planning and execution.

Another assumption present in planning was that the squadron could execute its proposed tasks with only three Gazelles. It was immediately evident to the 656 staff during their independent planning that the initial request would be completely inadequate for operations in Rhodesia. The country was twice the size of the United Kingdom. Despite having an advanced road and rail network compared to other African nations, the majority of the expansive country was simply featureless bush.⁴⁴ Use of “bush tracks,” which were little more than worn vehicles tracks off of the main tarmac roads, were further complicated by the various land mines placed throughout the countryside.⁴⁵ This understanding of the terrain would lead the ground force planners to focus air element support on the tasks of aerial resupply, air movement of personnel on a day-to-day basis, aeromedical evacuation, and the contingency of emergency evacuation of the ground monitoring forces.⁴⁶

While initial planning put a heavy reliance on air support with the RAF’s six Pumas and seven C-130s, the ground planners did not account for the limitations of these aircraft. The C130s would provide excellent resupply capability, dropping or air loading over 1,000,000 lbs. of stores.⁴⁷ However, troop and personnel movement would be

⁴⁴Nathan, “Operation Agila,” 13.

⁴⁵Ibid., 14.

⁴⁶C. M. S. Kaye, Lt Col, UK, Operational Instructions Number 1, Salisbury, Rhodesia, 20 December 1979 (Museum of Army Flying, Middle Wallop, England, Archive Box 117), 2.

⁴⁷Nathan, “Operation Agila,” 14.

limited to only improved runways. This left the movement between the various remote sites to the helicopters. The 150 hour block servicings required to maintain the Puma aircraft restricted the amount of hours flown, eventually being restricted to only twelve hours per aircraft each day.⁴⁸ The squadron received permission to increase their planning by an additional three Scout aircraft approximately a week after notification. This later proved inadequate in country and while 656 AAC recognized this beforehand, they were unable to change it until they were in Rhodesia. Shared understanding was still lacking through the CMG due to the continued lack of collaborative planning among all assigned units.

Another aspect of both the large area of operations and the significant amount of flying that occurred was squadron personnel fatigue. Long periods of duty over multiple days can quickly drain a pilot who is often task-saturated during flight duties. Once that is combined with the boredom of long transit times over featureless terrain, fatigue settles in and increases exponentially. During the initial planning, they paid very little attention to restricting the amount of time each pilot was allowed to fly, most likely due to a desire to meet initial mission requirements and further exacerbated by a lack of 656 AAC to voice concerns in planning. The squadron deployed with approximately four aircrews for each aircraft type, providing a redundancy of only one aircrew.⁴⁹ Based on the proposed requirements for helicopters in Rhodesia, this proved inadequate for higher tempo

⁴⁸Ibid.

⁴⁹S. R. Nathan, MAJ, UK, Annex A 'OP Agila–Personnel' to OP Agila Coordinating Instructions, 19 November 1979 (Museum of Army Flying, Middle Wallop, England, Archive Box 117), 1.

operations. This is another example of a detached realization of what was being planned by the higher headquarters.

Fuel was the most important area of planning built on too many assumptions and that presented the greatest obstacle to initial operations. The planners assumed Rhodesian Air Force's (RhAF) refuel facilities were more than adequate for the size and scope of the British helicopter operations. To an extent, this was true in that the fuel types used by all helicopters involved were the same. However, they did not take into account the different refueling devices required. Fuel was stored in Rhodesia in bowzers, underground tanks, 200-litre drums, or pillow tanks.⁵⁰ The Rhodesian aircraft had electrically driven pumps that allowed them to draw from the drum and pillow tanks, which the British aircraft did not have. This difference in aircraft equipment is most likely due to the Rhodesian requirement for ingenuity with the sanctions presented against them. This potential issue of pumps being required was identified and the solution came in the form of the RAF's zenith pumps. The pump eventually fell short for two reasons. They were not powerful enough to draw fuel from the pillow tanks despite attempts to modify them in Rhodesia.⁵¹ While this first issue was most likely going to be identified until actual use, the second was more due to a continued lack of coordination. Both RAF and AAC had zenith pumps, but with different electrical connections based on their respective aircraft. Adapters were available, but the AAC brought none and the RAF only had the adapters

⁵⁰Nathan, Operation 'Agila' 1979-1980, 5.

⁵¹Ibid.

for use with army pumps.⁵² This went unnoticed until the force was already deployed, requiring creative solutions to the issue.

Despite being left out of higher headquarters planning, the 656 AAC staff conducted squadron level and lower planning that had been refined over a long time. Prior to this deployment, elements ranging from a two aircraft detachment to a full company conducted exercises during the previous two years in Gambia, Germany, Canada, Denmark, Belize, Hong Kong, Italy, Kenya, and the United States.⁵³ While this often emphasized the decentralized aspect of command and control, the squadron became proficient at deploying. With the general lack of information from higher headquarters, the unit planned for the worst case scenario and loaded up a majority of the squadron's equipment including five three quarter-ton vehicles.

Significant attempts occurred to acquire missing equipment considered essential to air operations. Downed aircraft and personnel recovery is always a primary planning consideration for aviation units. While procedures are published for the way to conduct search and rescue missions, majority of the planning centers on locating the downed aircraft. This creates a known location for both search teams and the downed aviators to use for continued procedures. Various locations in the world use different electronic equipment to track and signal an aircraft's position. African countries relied on the use of the VHF SARBE beacon to do this. With knowledge on operations in Africa from the

⁵²Ibid., 8.

⁵³Warner, *From Auster to Apache*, 170.

Kenya rotations, a major effort was made to acquire VHF SARBE beacons from civilian helicopter operators for local search and rescue (SAR) missions.⁵⁴

Another focus area was the potential threat presented by the Patriotic Front (PF). The PF was comprised of the two insurgent groups mentioned earlier, but they did not necessarily work together. Operating primarily out of Mozambique, the Zimbabwe African National Liberation Army adopted a Maoist approach to their operations as advised by the Chinese.⁵⁵ With over 10,000 fighters in Rhodesia and a further 3,500 reserves in Mozambique, the group was conducting Maoist phase two operations by the ceasefire.⁵⁶ Zimbabwe People's Revolutionary Army reflected influence from their Soviet advisors with a considerably better organized command structure than the Zimbabwe African National Liberation Army.⁵⁷ This manifested in better communications and larger fights against the Rhodesian Security Forces in the search for a decisive type action. While the structures and approaches were different, both relied on communist manufactured weapons. This included the typical AK47, RPG7, and 7.62mm machine guns. More concerning to the 656 aircrews were their possession of 12.7mm and 23mm anti-aircraft machine guns with the Zimbabwe People's Revolutionary Army equipped with a limited number of Soviet SA-7 MANPADS.⁵⁸ While both groups had weapons presenting a significant threat to light aircraft, 656 decided that the air threat

⁵⁴Nathan, Operation 'Agila' 1979-1980, 5.

⁵⁵Boer, 36.

⁵⁶Ibid.

⁵⁷Nathan, Operation 'Agila' 1979-1980, 2.

⁵⁸Ibid.

would remain low based on the establishment of the ceasefire and the general purpose of the aircrews being in the country. This assessment was correct, but appeared premature based on the RhAF's assessment of a high SAM and anti-aircraft threat from the PF.⁵⁹ There appeared to be a rift in the respect provided between the RhAF and 656. A general dislike of the British being involved in "Rhodesian" matters caused difficulties in the squadron's operations and may also have been reciprocated with the unit ignoring the assertions of the RhAF. The CMG intelligence section released a threat assessment contrary to the RhAF assertions with the SA-7 threat as minimal.⁶⁰

Pilots and staff members conducted thorough examination of the military and political background of the Rhodesian situation, including detailed map studies.⁶¹ Terrain and climate briefings highlighted concerns about the expected hot temperature and high altitude operations that would occur. These conditions cause the air to be less dense and to require more aircraft power to maintain lift. They also prepared equipment and aircraft. Based on the perceived low threat, the 656 staff made conscious decisions to limit the addition of aircraft and body armor. The commander accepted the tactical risk presented as a tradeoff for additional maneuverability and power with reduced strain on the engines due to less weight. Sand filters were also left off of the aircraft with it being the rainy season in Rhodesia and an additional effort to get the most out of the engines in the power constrained environment.⁶² In the event that the PF threat increased due to a lack

⁵⁹Ibid., 4.

⁶⁰Ibid.

⁶¹Ibid.

⁶²Ibid., 6.

of identification between RhAF and AAC aircraft, 656 decided to make the squadron's aircraft visually distinguishable. Aircraft were initially painted white, but heavy rains caused the paint to run off. After trying dayglo as well, the unit reverted to white crosses on all fuselages and tail fins.⁶³ With the aircraft painted, aircrews briefed, and planning done as best as it could be 656 was ready to depart for Rhodesia.

Execution

656 AAC's journey to Rhodesia began on 19 December with the lead party of five personnel. The rest of the detachment and six aircraft arrived about five days later, flying on RAF VC10s and C130s, as well as United States Air Force (USAF) C141s and C5As.⁶⁴ Based on squadron planning, the detachment needed to be split between two locations in order to provide flexible and timely support. The CMG quickly realized that the initial aircraft and aircrew allocations would not be sufficient and a 656 request processed through the CMG for the entire squadron was made back to Britain. 656 AAC received political clearance to deploy the remaining squadron aircraft after only two days on the ground in Rhodesia, bringing the aircraft totals to six Gazelles and six Scouts.⁶⁵ The last minute deployment of forces could have been avoided if 656 was integrated into the initial planning. With the entire squadron deployed on 6 January, the Scout

⁶³Nathan, "Operation Agila," 13.

⁶⁴Nathan, Operation 'Agila' 1979-1980, 3.

⁶⁵Nathan, "Operation Agila," 13.

detachment went to the Rhodesian air base at Gwelo and the Gazelle detachment stayed in Salisbury.⁶⁶

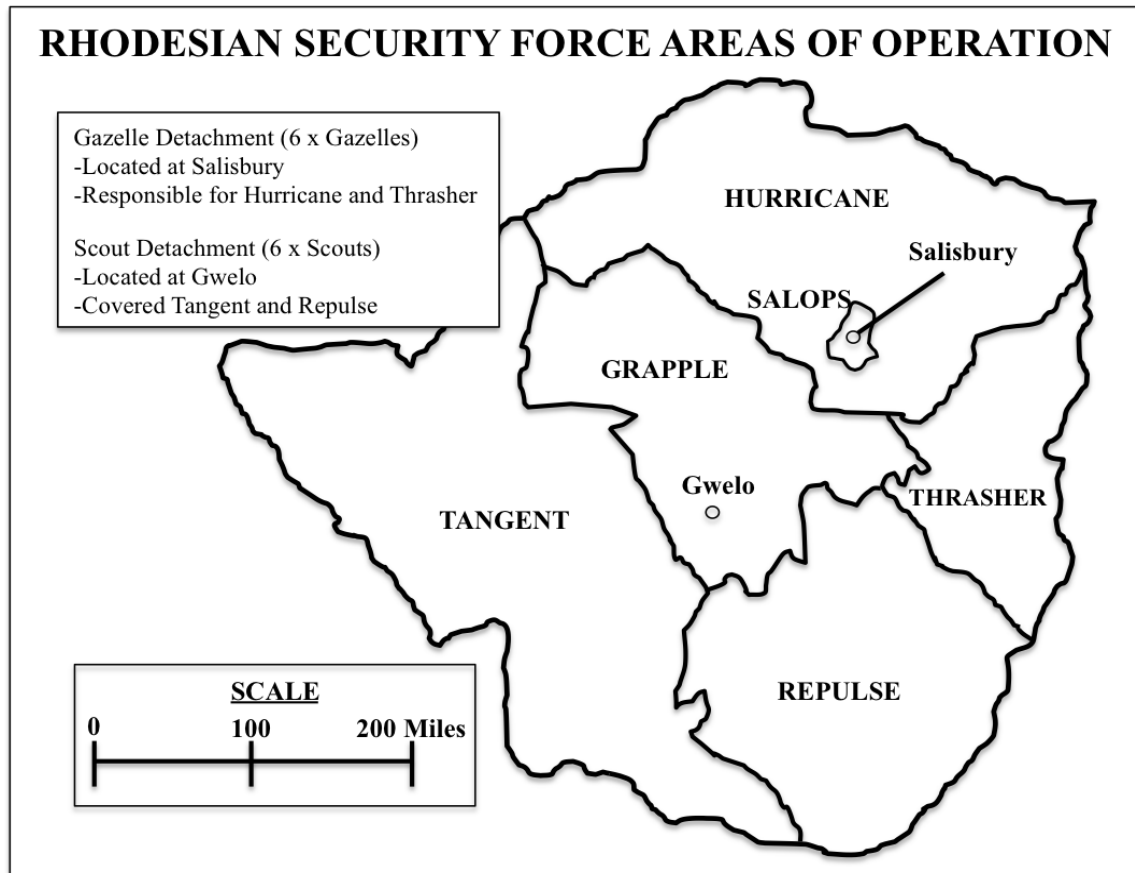


Figure 1. Rhodesian Security Force Areas of Operation

Source: Created by author.

While the increase in aircraft and aircrews proved vital to supporting operations, it initially exacerbated other difficulties overlooked during the disjointed planning.

Limited facilities for barracks and maintenance were at each location required both the

⁶⁶Ibid.

RAF and AAC to share with the RhAF. The addition of the squadron's remaining aircraft further cramped the shared space. Additional personnel also had to use barracks away from aircraft locations. In Salisbury, the accommodation to airfield distance was approximately 10 miles away.⁶⁷ It soon became evident that the five vehicles deployed were inadequate, so they rented two cars and a mini-bus.⁶⁸ While the squadron adapted to the challenges presented for housing and transportation, proper integration into planning prior to the deployment would have prevented many problems.

The greatest issue to come out of the AAC not being integrated in planning was command and control. During planning, MOD RAF decided the 656 would fall under the RAF Air Commander Rhodesia.⁶⁹ This would not be the case as it was standard procedure for AAC's to be under operational control of an army command, in this case the CMG as it was the Land Forces Component Command. The CMG's reassertion of the organizational structure cleared up the confusion. While this was straightened out quickly, the tasking aspect of the command structure was not solved. Taskings were developed and distributed from the CMG Headquarters G section, manned only by RAF officers who were unfamiliar with AAC capabilities and limitations.⁷⁰ The easiest way to fix this issue consisted of provided an AAC officer to advise in the creation and filtering of tasks. However, 656 could not afford to provide a permanent liaison to the tasking section based on the high tempo of operations and the lack of extra crewmembers to

⁶⁷Nathan, Operation 'Agila' 1979-1980, 3.

⁶⁸Ibid.

⁶⁹Ibid.

⁷⁰Ibid., 4.

perform flying duties. Instead, it took the steady input of the 656 staff and pilots for the RAF staff officers to learn the limitations of the AAC aircraft and the operating procedures of the squadron. Outside of taskings, other information pertaining to mission changes or command guidance was routed through the RAF leading to numerous delays and non-receipts of important information.⁷¹ Given the tension-laden environment of the uneasy cease-fire, the implications of missed information could have resulted in disastrous consequences. The fact it did not is a testament to the professionalism of the 656 AAC aircrews.

The general poor performance of the radios in both the Scout and Gazelle only served to exacerbate command structure and information flow issues. To ensure proper tracking of the aircraft flying throughout the country and to react in a timely manner if an aircraft experienced problems, pilots filed full flight plans.⁷² This was not out of the norm for the 656 aircrews, but it greatly reduced the flexibility required for the taskings. Flight following, where an aircraft maintains communications with air traffic control (ATC) services to verify the aircraft's location, took on a higher level of importance with impromptu missions flown outside of the filed flight plan. ATC conducted communication over VHF/AM radio in Rhodesia and while the Scout and Gazelle had the capability to talk over this band with their STR37E, it was greatly limited in range. Aircrews could receive transmissions at about 50 to 70 nautical miles (nm), but could only transmit at about 15 to 20 nm; this was further diminished when low-level flight

⁷¹Ibid., 3.

⁷²Ibid., 4.

reduced the antenna's line of sight.⁷³ Though the aircraft's ARC340 VHF/FM radio could transmit at ranges up to 80 nm at altitude, this only ensured effective communications with ground forces that would not be able to facilitate flight following or contact with ATC services. The RAF overcame these issues with the use of a High Frequency (HF) guard net that maintained communication throughout the entire AO.⁷⁴ This required HF radios in both the RAF HQs and the aircraft, which the AAC aircraft did not have. Understanding and establishing a communications network and appropriate flight procedures plan would have greatly assisted in ensuring the flight safety of all crews. Risks were taken with AAC aircraft flying at times without radio contact with controlling agencies, which would not be accepted in civilian airspace, let alone a tenuous environment.

Communication issues often encouraged aircrews to fly higher while other reasons also lead to the preference of altitude over low-level flight. Upon arrival, the RhAF staff briefed the aircrews on the threats presented by the PF with a particular focus on the SA-7 threat. However, the CMG staff believed this to be exaggerated greatly with the use of small arms fire against aircraft to be more dangerous.⁷⁵ British intelligence believed that the larger caliber anti-aircraft weapons were controlled at a high level within the political structure.⁷⁶ The disparity between assessments is most likely due to the general disdain that the Rhodesians and British had for each other. Nevertheless, the

⁷³Ibid., 5.

⁷⁴Ibid.

⁷⁵Ibid., 4.

⁷⁶Nathan, "Operation Agila," 13.

bigger threat in the eyes of the squadron was that of navigation over featureless terrain and the rapid appearance of thunderstorms during the rainy season. Aircrews were to maintain flight above 2,500 ft. above ground level (AGL) unless weather dictated lower flight levels.⁷⁷ Prior to the confirmation of each side in Rhodesia's commitment to the cease-fire, tensions were high. However, the truce lasted and the crash of a Puma that flew into low hanging wires solidified the decision.⁷⁸

Rapidly forming storms forced aircrews to fly lower to avoid the cloud ceiling and at times required them to divert. Diversion presented issues, as aircrews were limited to the locations that refuel was possible. As mentioned before, the Scout and Gazelle could not refuel from pillow tanks or fuel drums without a pump. The RAF zenith pumps were not compatible with the AAC aircraft electrical ports without an adapter, which 656 did not have. RAF Kelston and Villiers pumps were flown into Rhodesia in a limited number to serve as a solution. Driven by gas, the pumps were in bad shape after years of neglect and provided little value.⁷⁹ The best solution came from the RhAF. They provided small, 50 lb gas-driven pumps that were approximately 25 percent less bulky than that of the Kelston.⁸⁰ Compact enough to fit in the aircraft, the squadron was now able to refuel at any site needed. This also eliminated complications encountered with zenith pump electrical connection compatibility. Whether the RAF understood the issues presented by the RhAF fuel distribution or not, 656 did not know about it. The

⁷⁷Nathan, Operation 'Agila' 1979-1980, 4.

⁷⁸Nathan, "Operation Agila," 13.

⁷⁹Nathan, Operation 'Agila' 1979-1980, 5.

⁸⁰Ibid.

acquisition of small gas-driven pumps prior to departure from England would have reduced the initial flight issues and the continued strain on RhAF relations that saw the British forces as generally underprepared.

656 AAC continued to adapt as required to meet mission. Combined with the stressful flight environment, wear began to show in the ranks. Aircrews were constantly tasked to conduct missions throughout their respective AOs to include personnel movement, senior staff member liaison sorties, and casualty evacuation (CASEVAC)⁸¹ of both CMG and PF forces.⁸² Despite the large amounts of flight hours, areas throughout the Rhodesia were running low on supplies where the mood was already tense. To relieve these issues, the AAC began “Milk Runs” and “Air Mobile Supermarkets.”⁸³ While these runs increased ground force morale, this only added stress to aircrews already stretched thin. Recognizing the strain on the aircrews and with an eye towards keeping in check the heavy demand on the aircraft, the 656 commander instituted a five hour flying day restriction.⁸⁴ The fatigue level returned to a manageable level, further balanced with a day off each week. The decision for flying hour limits demonstrates adaptive decision making from a unit in touch with its soldiers. However, prior planning to the deployment should have identified the maximum flying hours that crews and aircraft would be able to maintain over the proposed mission timeline. Most likely, the lack of the restriction was

⁸¹Casualty Evacuations are conducted without medically certified personnel on the aircraft. CASEVACs provide immediate movement of the injured in time sensitive situations where it would take too long to move medical personnel to the site of injury.

⁸²Ibid., 4.

⁸³Nathan, “Operation Agila,” 15.

⁸⁴Nathan, Operation ‘Agila’ 1979-1980, 6.

focused on providing the most support possible at the beginning of the operation.

Whether acknowledged or not, the commander accepts risk when it comes to aircrew rest and their ability to perform flight duties in stressful environments.

While the Scouts and Gazelles would prove their worth, they suffered from the Rhodesian environment. Both types experienced issues with their main rotor blades. Small particulates acted like sand paper against the leading edge of the blades, which was further magnified by the thinner air experienced at 5000 ft. mean sea level (MSL).⁸⁵ They made attempts to prevent this erosion with polyurethane strips being applied to the lead edge. They had to abandon this method when occurred with ambient temperatures exceeding 77 degrees Fahrenheit.⁸⁶ After replacing of the rotor blades, main rotor blade tracking reduced and maintained vibrations within acceptable limits were commonplace.⁸⁷ This increased the workload of the maintenance crews to further maintain a high tempo flying program. The replacement of blades and the lifting of component major parts during services required the use of a Bedford HIAB or ATLAS, which the RAF Puma detachment provided at the request of the AAC.⁸⁸

This was not the only time when the maintenance section was without required materials. During high tempo operations, aircraft will go through a large amount of petroleum, oil, and lubricants (POL). 656 underestimated the amount of POL they could obtain from Rhodesia, as years of economic sanctions had greatly reduced what was

⁸⁵Ibid., 8.

⁸⁶Ibid.

⁸⁷Ibid., 9.

⁸⁸Ibid.

available in country.⁸⁹ This required large shipments from the United Kingdom during the deployment. The Main Supply Depot (MSD), which provides the basic benchstock required for servicing and maintaining aircraft, for the Scout detachment was also lacking. They needed to inscale 36 items and generally increase others.⁹⁰ This was unfortunate since the recent deployment to Gambia had identified the appropriate MSD for operations of this nature.⁹¹ The Gazelle detachment MSD fared better with adequate items for the operational tempo experienced with a relatively quick waiting period of eight to fifteen days for major end items not present to be sent from England.⁹² It becomes quickly apparent that the lack of joint planning led 656 to underestimate what their flight levels would be and what types of major maintenance they would require. The late decision to bring in all of the squadron aircraft also contributed to the inadequate levels of benchstock available. The maintenance personnel adapted and overcame in a magnificent manner meeting all missions and no incidents occurred during flight from maintenance faults. Their efforts ensured that the squadron operations did not exceed the needed operational reach of the CMG.

Conclusion

After a surge in flying revolving around the beginning of the Patriotic Front and Rhodesian Force integration, the 656 AAC began their deployment home. In little over

⁸⁹Ibid.

⁹⁰Ibid.

⁹¹Ibid.

⁹²Ibid.

three months, the squadron flew over 2,100 hours combined (1063.2 Scout and 1109.9 Gazelle).⁹³ They moved approximately 2,500 personnel and 100,000 lbs. of freight, covering over 250,000 miles.⁹⁴ More importantly, the squadron's efforts ensured the operational success of the CMG as the strategic goals of the mission were met. The PF integrated peacefully into the population, while a secure environment facilitated elections and the establishment of an independent Zimbabwe. The eventual operational success was not initially assured.

Critical to any operation is the shared understanding of all those involved. A shared understanding allows everyone to operate on the same page, reducing frictions within the organization. It also creates a framework of critical analysis needed to identify both opportunities and risks within a given operational environment. The CMG and the MOD failed to do this during Operation Agila. The understanding of logistical issues, including the incompatibility of British aircraft with RhAF refueling equipment, went unnoticed until arrival in country. Appreciation of aircraft and aircrew limitations in the early stages of planning would have led to a better understanding of the conditions needed to meet the commander's desired endstate of the operation. While surging to maintain the desired operational tempo, the ability to maintain this tempo, known as endurance, remained disregarded during the initial surge of flight hours to maintain the desired operational tempo. This created a good amount of risk that was not addressed or mitigated at the operational level.

⁹³Ibid., 6.

⁹⁴Nathan, "Operation Agila," 16.

Tactical risk represented a different story. 656 identified the risks associated with the terrain and the enemy forces during planning. Aircrews received training in higher temperature and higher altitude flying considerations. Those having flown in similar climates were leveraged not only to instruct on the conditions, but also as advisers in execution. While the full understanding was less than shared, the leadership and aircrews understood the overall mission of facilitating the ceasefire and integration of the insurgent forces back into the population. Understanding the general intent led 656 to mitigate the potential threats presented with high altitude flying and aircraft marking without being told to do so. This represents the innovation and initiative shown throughout planning and execution.

What can be learned from the preparation and execution is the importance of understanding and practicing operational art? Collaborative planning among all organizations is a must as it established a shared evaluation and understanding of the operational environment. This also means creating a command and control structure that ensures continued collaboration occurs when the main planning is complete. The addition of a 656 AAC liaison or AAC officer from a different unit into the early stages of planning could have alleviated a good amount of the ensuing confusion. Involving the 656 in the proper tasking of their assets and planning of sustainment requirements mitigates the risk associated with ground operations culminating too early because of a lack of air assets.

As for the 656, their ability to adapt built on flexibility from planning is very apparent. As a learning organization, they were very blunt in their lessons learned and need to adapt further for future challenges. A clear issue that caused a majority of the

issues experienced were the lack of integration during planning, preparation, and execution. A greater understanding of what lay ahead in terms of mission and the operating environment would have led to better estimates on the size of both the detachment and logistics required. Limitations of the current aircraft radios, the lack of a sufficient number of VHF SABRE beacons, and the absence of HF radios were identified as areas needing further research and focus for the future. More immediate was the need for an aircraft-mounted pump or a variant to allow for more versatile access to fuel.

What is very apparent to those researching the performance of the 656 AAC in OP Agila is the excellence and focus on small unit leadership. Frequent detachment deployments around the world led to the development of a decentralized command style that worked very well in an environment required split operations. This would again serve as the hallmark for the excellence of 656 AAC and its ability to adapt when it found itself flying somewhere few even knew existed.

CHAPTER 3

OPERATION CORPORATE PREPARATION

So there I was, fully briefed up and ready to go to war on the staff of a commander whom I had not met and as a part of a Headquarters which had not even been formed then—let alone practiced together.

—Major W. A. McMahon,
Falklands Royal Marine and Army Aviation Report

Little time elapsed between the squadron's redeployment from Rhodesia and the beginning of their next major endeavor. In the midst of the 656 AAC moving from Farnborough to Netheravon for the consolidation of British light helicopter forces, news of an Argentine invasion of the Falkland Islands occupied the majority of TV and radio airtime.⁹⁵ Days later, the first elements of the squadron boarded a ship heading south with the rest to follow shortly. Numerous challenges surfaced on how to conduct operations 8,000 miles south of England with no friendly terrain to operate from against an enemy with a significant modern military capability. A short window for planning and preparation further exacerbated these challenges, creating a sense of urgency. Flexibility through planning would potentially reduce the need of units to adapt in a hostile operating environment where adaptation might mean loss of life. The squadron needed to leverage the lessons learned from Operation Agila to counteract the small window available for preparation.

This chapter will examine the preparation of the squadron after its notification of deployment through the final planning for the amphibious assault on San Carlos. Implemented changes to planning efforts from those of Operation Agila are primarily

⁹⁵Greenhalgh, "The Falklands War As Seen By Col J. Greenhalgh DFC."

seen in the squadron's integration into higher headquarter planning in the early stages, the creation of a light helicopter staff officer position in the land forces headquarters, aircraft modifications based on the expected operating environment and its maintenance posturing for the expected high operational tempo. Increased flexibility also occurred through last minute training involving basic soldier tasks and shipborne operations. Where the unknown caused consternation on the part of the aircrews during Agila, this gap in information decreased and facilitated innovation in the face of adversity. Conditions were set for small unit initiative when the fog of war required it the most.

The Argentine Occupation of the Falklands

“Also, one feels a bit more patriotic when one is away from home, particularly when one has arrived in a place which you feel belongs to your country,” quoted by Osvaldo Niella, Captain of the Transport Ship *Bahia Buen Suceso*

Shortly after the ceremony appointing him as the new Chief of Naval Operations, Vice-Admiral Juan Lombardo received the order from the Commander-in-Chief of the Argentine Navy to begin planning secretly to occupy the Falkland Islands.⁹⁶ It was December 1981 with approximately one year until the 150th anniversary of the British Navy's exile of the Argentine governor and settlement from East Falkland Island. The Argentine military junta was determined to have back in their possession of the Islands one way or another prior to the anniversary. The British occupation of the islands was perceived as a direct insult to the Argentine people and the potential recovery of them would assist in quelling the population's unrest with the ruling Argentine military junta.

⁹⁶Martin Middlebrook, *Argentine Fight for the Falklands* (South Yorkshire, England: Pen and Sword Military, 2009), 1.

Argentine planning picked up steam with the creation of a Comision de Trabajo, a Working Party, in January 1982 consisting of Vice-Admiral Lombardo, General Osvaldo Garcia of the Army, Brigadier-General Siegfriedo Plessl of the Air Force, and eventually Rear-Admiral Carlos Busser of the Marines. Despite the initial intent of only a temporary presence on the islands, later plans included capturing them and the establishment of a permanent garrison for a continued military presence during what the Argentine government believed would be the integration of the islands back into Argentina. 15 September 1982 became the proposed date for the landings to ensure the Argentine army conscripts would be at their peak readiness during their mandatory year long period of service, as well as the full reception and integration of the Naval Air Arm's 14 French-built Super Etendard aircraft and fifteen Exocet anti-ship missiles.⁹⁷ However, misunderstandings over a relatively insignificant matter led to the early execution of the invasion. Ultimately, an Argentine junta and planner assumption existed that the British would not react militarily based on the large distance from England.

In March 1982, an Argentine transport ship carrying eighty passengers and cargo landed on South Georgia to remove legally purchased scrap material.⁹⁸ The workers, eager to be on what they believed to be part of Argentina, raised an Argentine flag in violation of the agreed upon landing permit with the British administrator. The crews also fired rifles at random harmless targets out of boredom. Reports quickly reached the Falkland governor, who forwarded them on to England with additional inaccurate information that the landing party contained Argentine military personnel. The British

⁹⁷Ibid., 4-5.

⁹⁸Ibid., 8.

government sent a formal protest to the Argentine government to remove the personnel and ship from South Georgia or necessary actions would be taken. This coincided with the launching of the HMS Endurance with 22 Royal Marines on board from the Falklands towards South Georgia as a reaction to the perceived incursion.⁹⁹ The situation escalated further with threats exchanged between the two nations until each military possessed two armed groups on separate portions of the island. These actions were the opportunity the Argentine junta was looking for, presenting a pretext for the invasion of the Falklands as retaliation for British actions. Last minute preparations occurred in Argentina as large forces landed on the Falkland Islands on 2 April 1982.

Representation in Planning and Decisions

As the Argentine forces began their invasion on 2 April 1982, notification reached the 7th AAC Regiment of a potential military response. 7 Regiment had three squadrons: 656, 657, and 658. The importance of habitual relationships was not lost on the AAC and each of the units in 7 Regiment were linked to an associated ground unit for peacetime training. A working relationship built on common experiences and a mutual understanding of each organization is critical to the cohesive execution of combined arms maneuver. Habitual relationships provided unity of action in planning and execution between the air and ground units. They also allowed supporting aircrews to thoroughly understand the ground commander's intent on a regular basis. Shared understanding between units facilitates creativity and innovation, where best practices of an aviation element are adapted to better fit the personality and tactics of the supported unit.

⁹⁹Ibid., 10.

Both 656 and 657 maintained a training affiliation with ground brigades dedicated to operational roles in northwest Europe. 658 AAC's affiliation remained looser in nature with 5 Infantry Brigade and their primary role of defense of the United Kingdom, as well as Priority 2 operations.¹⁰⁰ With the habitual relationship already established and 5 Infantry Brigade being put on alert, 658 was notified the night of 2 April to be ready for movement south. This was not well received by 656 officers eager to test their abilities in actual combat, with one exclaiming, "Why can't it be us!"¹⁰¹ Upon further inspection, the decision to send 658 based on their peacetime training affiliation seemed a bit premature. While 658 conducted training with 5 Inf Bde, its unit structure was non-standard in that it was designed to meet the Arms School and United Kingdom Land Force (UKLF) liaison commitments.¹⁰² Additional deficiencies existed in their aircraft lacking the latest upgrades in G1098 equipment and SS11 missile fittings on their Scouts.¹⁰³ As the challenges of the Falkland's operating environment became apparent, the MOD made the decision to put 656 AAC on alert to support Operation Corporate. This does not mean that air ground operations and their associated mutual trust are unimportant. However, it represents the appropriate evaluation of the potential operating environment and the required friendly forces to support expected missions. 656 AAC's structure provided the most applicable capabilities for the expected operational environment and would allow

¹⁰⁰C. F. Jebens, Brigider, UK, Falklands Campaign—Lessons Learnt, Airfield Camp Netheravon Wilts, 3 August 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 111), 2.

¹⁰¹Greenhalgh, "The Falklands War As Seen By Col J. Greenhalgh DFC."

¹⁰²Jebens, 2.

¹⁰³Greenhalgh, "Other Thoughts and Details from JG Greenhalgh DFC."

aircrews to focus on the mission at hand rather than the lack of functionality in their aircraft. Changing of the squadrons to support Operation Corporate represented a departure from the situation experienced in Operation Agila.

Another point of change occurred with how 656 would be included in planning. Instead of all aviation being mistakenly consolidated with the RAF, the Headquarters Army Air Corps United Kingdom Land Forces (HQ AAC UKLF) commanded by Brigadier C. F. Kit Jebens ensured AAC specific planning would be synchronized with the UKLF and the Land Force Component Commander.¹⁰⁴ This facilitated addressing of AAC concerns during preparation and increased mutual support with the other light helicopter squadron to support the deployment, the Royal Marine's 3 Commando Brigade Air Squadron (3 CBAS) of Scout and Gazelle aircraft. Headquarters AAC UKLF also transferred a number of Gazelles and Scouts from the AAC Centre to 3 CBAS, as well as Battle Casualty Replacements¹⁰⁵ in the form of AAC Centre instructor pilots.¹⁰⁶ Aircraft transfers centered on the perceived need for additional anti-tank capability in the Scout with SS-11 missiles and to replace the CBAS Gazelles currently under modification. Maintenance support was also provided in the form of an Aircraft Maintenance Group (AMG) from the 70 Aircraft Workshop and a Mobile Stores Detachment (MSD).¹⁰⁷ The

¹⁰⁴W. A. McMahon, MAJ, UK, Falklands Royal Marine and Army Aviation Report (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 3-7.

¹⁰⁵Battle Casualty Replacements are personnel identified to replace any combat losses experienced during combat operations. Pilots cannot be simply replaced and require individuals trained in a particular aircraft. Instructor pilots are even harder to replace due to the years of training experience required to receive their credentials.

¹⁰⁶McMahon, Falklands RM and AAC Report, 3-7.

¹⁰⁷Ibid.

initial coordination assisted in building a positive relationship between the Royal Marines and the AAC while ensuring a synchronized use of light helicopters during the conflict.

Headquarters AAC UKLF also assisted in the early planning and deployment of a three Scout detachment from 656 AAC to 3 CBAS. While this increased the offensive capabilities of the light helicopters during initial operations, the decision had more to do with a personal request from the commander of the 2nd Battalion, Parachutist Regiment. Lieutenant Colonel Herbert Jones was the well respected and hard charging 2 Para commander. When Argentina first invaded, Jones and his unit were destined for a tour in Belize with an advance party already conducting initial coordination for the upcoming deployment.¹⁰⁸ The thought of being left behind fueled a non-stop drive from a ski vacation in Europe back to England. He got his way with 2 Para being selected in addition to 3 Para for early deployment to the Falklands. Jones would also persuade UKLF to have the 656 AAC detachment that provided support in 1981 during an exercise in Kenya to accompany him as well. Captain Greenhalgh, the 656 Kenya detachment commander, and his pilots greatly impressed him with their superior support and aggressiveness. This is evident in a letter from Jones in which he stated, “(b)oth John Greenhalgh and Sergeant Kalinski flew long hours in, often, difficult circumstances, and nothing was ever too difficult; or too much trouble for them.”¹⁰⁹ The request built on mutual trust resulted in three Scout aircraft and personnel led by Captain Greenhalgh sailing early with 2 Para. Greenhalgh and Kalinski’s actions in Kenya represent a

¹⁰⁸Mark Adkin, *Goose Green: A Battle is Fought to be Won* (London, England: Cassell Military Paperbacks, 2003), 19.

¹⁰⁹H. Jones, Lt Col, UK, Letter to MAJ WJH Moss, 12 January 1982.

constantly present theme for 656 AAC. Detachment leadership consistently showed an aptitude for excellence in its support of a wide variety of missions in numerous locations. They took the guidance given and executed initiative within higher's intent.

The most significant action that Brigadier Jebens enacted was the assignment of Major W A McMahon to the Land Force Falkland Islands (LFFI) staff as the Staff Officer 2 Light Helicopters (SO2 Lt Hel). With two brigades involved in Operation Corporate (45th Commando under Colonel Thompson heading south and 5 Inf Bde preparing for movement), it was decided that Headquarters Major General Royal Marines, Commando Forces under Major General Jeremy Moore would act as the LFFI.¹¹⁰ Due to lack of finances, Moore's staff was unable to conduct tactical command and control on its own, requiring additional staff members. While the RAF and Royal Navy provided supplemental officers as liaison officers, HQ UKLF provided the bulk of numbers needed with the additional personnel being referred to as the "Army Element."¹¹¹ Bolstering of the staff with the different services ensured that the planning and execution of ground operations was joint in nature and would facilitate coordination needed during the coming complex actions. The SO2 Lt Hel position found itself inside of the Supporting Arms Coordination Centre with the Offensive Air Support and Tactical Support representatives.¹¹² Other staff members in this section included air force, air defense, artillery, and naval gunfire representatives. One staff section now represented all airspace users ensuring that the needs and requirements of each user were accounted for.

¹¹⁰McMahon, RM and AAC Report, 3-12.

¹¹¹Ibid.

¹¹²Ibid., 3-10.

Issues would arise during operations, but the cell provided quick solutions and deconfliction capabilities that did not exist during Operation Agila. Outside the expectations of the LFFI Chief of Staff, Brigadier Jebens provided McMahon with the guidance for his overall duties of coordinating the efforts of 3 CBAS and 656 AAC, as well as advising the LFFI CDR on the use of light helicopters.¹¹³

Understanding the Situation

Despite the events transpiring in South Georgia, the eventual invasion and occupation of the islands came as a general surprise to the British government. This resulted in very little understanding of the initial situation, to include the extent of the Argentine forces deployed. A majority of the first intelligence briefs focused on an organizational overview of the Argentina military. The intelligence section from the United Kingdom Royal Marine (Land) threat briefing given to members of the 656 AAC on 8 April was typical of these early presentations.¹¹⁴ They briefed formations and major vehicles, as no one knew the initial landing force or the proposed reinforcements. However vague these briefs were, they brought to light the capabilities of the Argentine military and highlighted for many that they “were not up against a bunch of third rate troops and it was a bit frightening.”¹¹⁵ The squadron and the rest of the deploying forces faced a substantial ground force that was backed by naval and air force capabilities.

¹¹³W. A. McMahon, MAJ, UK, Operation Corporate Falklands 1982, Diary, SO2 Lt Hel, Entry Date 10 May 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹¹⁴Greenhalgh, “The Falklands War As Seen By Col J. Greenhalgh DFC.”

¹¹⁵Ibid.

No significant information was provided from the Royal Marine detachments captured during the initial landings and eventually released through diplomatic procedures. Colonel Julian Thompson described the visit with the detachment during their debriefings as “a wasted trip, and in hindsight it should have been apparent to me that they would have nothing to offer about the Argentine order of battle, or anything else that would be relevant by the time we arrived in the South Atlantic.”¹¹⁶ Any forces that the detachment encountered were likely to be in different locations than the initial landing sites and the Argentine forces divulged nothing noteworthy to the detachment as it left the islands. The lack of intelligence on the composition and disposition of forces continued until aerial intel assets and Special Forces units made their trip south.

Despite the lack of intelligence on the Argentine formations, there was a wealth of knowledge on the actual landscape of the Falkland Islands as numerous Royal Marine detachments served short tours on the eastern island. For instance, Major Ewen Southby-Tailyour conducted numerous surveys of the beaches for a yachtsman’s guide to the Islands while stationed there.¹¹⁷ His detailed knowledge of the environment provided excellent briefing materials and greatly enhanced the understanding of the terrain’s potential effects on operations. Described as being similar to parts of Scotland, the island was littered with “bleak moorland, peat bogs, stone runs and rocky outcrops.”¹¹⁸ The

¹¹⁶Julian Thompson, *3 Commando Brigade in the Falklands: No Picnic* (South Yorkshire, England: Pen and Sword Military, 2007), 14.

¹¹⁷*Ibid.*, 12.

¹¹⁸C. P. Cameron, MAJ, UK, 3 CDO BDE Air SQN (CBAS) RM Report–OP Corporate, 24 August 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 1.

rough terrain, combined with a general lack of serviceable roads outside of the major settlements greatly reduced cross-country mobility for non-tracked vehicles. It was readily apparent to the British ground force commanders that assault helicopters would be essential to increasing mobility and providing the ability to adjust the tempo of operations.¹¹⁹ Unlike Operation Agila, an appreciation of the terrain's effects on ground operations was understood and would facilitate requests for additional army aviation assets.

An aspect of the terrain of more concern to 656 was the general lack of trees on the island. Utilizing the terrain to provide both stealth and protection, light helicopters mask their aircraft and movements behind anything that disrupts it from being visual acquisitioned. Masking behind trees was integral in AAC operations, especially for those preparing for potential NATO operations in the heavily forested Norway. Combined with the flatter nature of the Falklands' ground, the ability for Scout and Gazelle aircraft to conduct reconnaissance and other operations while masked behind concealment was near impossible.¹²⁰ The potential Argentine military threat to air operations with its modern equipment and use of fixed wing assets caused further consternation. The inability to mask aircraft led to two significant decisions in the conduct of light helicopter operations. The first was the limiting of light helicopters to a flight ceiling of 50 feet above ground

¹¹⁹Michael Clapp and Ewen Southby-Tailyour, *Amphibious Assault Falklands: The Battle of San Carlos Water* (Annapolis, MD: Naval Institute Press, 1996), 67.

¹²⁰Cameron, 3 CBAS RM Report, 1.

level (AGL).¹²¹ 50 feet greatly limited the ability for major surface to air weapon systems to acquire and target any helicopter. The squadron also believed that 50 feet limited the ability for ground elements to react to the aircraft's presence with small arms fire.

The second decision was to arm the Gazelle with some type of self-defense weapon. While the Scout was fitted with either SS-11 missiles or side-mounted guns, the Gazelle was not originally designed for the addition of armaments. However, vulnerabilities of the Gazelle in its reconnaissance flight profile to potential threats were recognized throughout the AAC during various detachment missions including Operation Agila. Within an atmosphere of a stringent defense budget, the army deemed the Gazelle's primary role of reconnaissance as not requiring of any protection.¹²² Operation Corporate and the funding to come with it provided the last emphasis to search for and rapidly field a self-defense weapon system. Modifications made to the aircraft will be discussed below, but the important aspect of these additions was the staff members and commanders early recognition of the requirements for the expected environment. The resulting flexibility provided to the aircrews proved crucial to their ability to adapt.

Based on the understood operational environment, Major McMahon worked with the new LFFI staff and identified the most likely missions that the light helicopters would be involved in. Prior to the actual invasion of the Falklands, created plans of military capabilities centered on how fast a British task force could arrive in the South Atlantic.

Sir Terence Lewin later declared that, "We had no plan for a campaign of this sort in the

¹²¹W. A. McMahon, MAJ, UK, Diary SO2 Lt. Hels., Operation Corporate Falklands 1982, Friday, 7 May 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹²²McMahon, Falklands Royal Marine and Army Aviation Report, 3-1.

South Atlantic, nor for the reoccupation of the Falkland Islands.”¹²³ The initial deployment was essentially a show of force without any stated strategic endstate for the military movement. Military planners needed to make assumptions on the operations to follow if the islands had to be taken by force. Major McMahon focused on potential missions that the light helicopter forces would need to accomplish in support of ground maneuvers. These missions included observation and reconnaissance, armed action, aerial observation for indirect fires, CASEVAC, pathfinding and protection for assault helicopters, and command and control.¹²⁴ Although few pilots had actual operational experience, the identified roles were typical of the mission sets for which both the CBAS and AAC trained.

Planners also examined the likely conditions in which the mission sets would occur. Operations would primarily occur from ships prior to the establishment of bases on land and would occur during day, night, and adverse weather conditions. They would also have to share the airspace with other aircraft and indirect fires. To ease the aircrew workload and to ensure proper deconfliction of the joint airspace, Major McMahon completed the aviation section of the LFFI Standing Operating Procedures (SOP). The SOP captured the created deconfliction zone with vertical limitations of 0-50 feet AGL for light helicopter operations.¹²⁵ Major McMahon also established basic requirements for the use of light helicopters in an armed role, including request submission timelines

¹²³Hastings, 71.

¹²⁴W. A. McMahon, MAJ, UK, OP Corporate Report–Lt Hel, 17 September 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 2.

¹²⁵McMahon, Operation Corporate Falklands 1982, Diary, SO2 Lt Hel, Entry Date 7 May 82 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

and the formats to be used.¹²⁶ Other coordination was conducted with the LFFI staff to ensure continuity throughout the SOP. Despite amendments made to the document during the operation, the regulations and procedures established in the LFFI SOP provided flexibility for the aircrews to operate with reduced requirements for direct command supervision.

Aircraft Modifications and Equipment Acquisitions

The rapid modification for aircraft for use in Operation Corporate presented the most challenging aspect of preparing for the deployment. The most successful modification came in the form of the self-defense weapon for the Gazelle. As previously mentioned, the high-threat environment of the Falkland Islands presented the concern of how Gazelle crews could protect themselves during reconnaissance operations. The solution was the French Matra SNEB rocket pod. Each pod held up to six air-to-ground 68mm rockets that would be used for either self-defense suppression or offensive employment against soft targets.¹²⁷ Brigadier Jebens made the decision to acquire enough SNEB pods and rockets to potentially fit all of 3 CBAS Gazelles that were already enroute to Ascension Island. Major Frank Esson, Headquarters Director Army Air Corps, acquiring them in France with a Beaver aircraft.¹²⁸ Westland Helicopters Limite fitted the

¹²⁶Land Forces Falkland Islands Standing Operating Procedures (Royal Marine Museum, Portsmouth, England, Archive Box 104), 201-1.

¹²⁷C. P. Cameron, MAJ, UK, Draft OP Corporate Report for Brigadier Jebens, 16 July 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 12.

¹²⁸McMahon, McMahon RM and AAC Report, 3-7.

pods were fitted to the existing light stores boom on each side of the aircraft.¹²⁹ Initial testing was successful with the use of a primitive sighting device consisting of a plastic rod extending from the pod to provide the pilot with a sight picture. An urgent operational requirement statement was created and the Director of Military Operations quickly approved the acquisition of additional SNEB rocket pods for both light helicopter squadrons deploying.¹³⁰ Gazelles already deployed were modified at Ascension Island with enough rockets for aircrews to become familiar with their basic operation. While the SNEB rocket pods were never fired in anger, the rapid approval, acquisition, and fielding process was unprecedented in its success. It also represented the addressing of legitimate concerns of the AAC that would have gone unanswered without proper integration into the staff.

Other modifications focused on shipborne operations. Naval radar operators had a difficult time visually acquiring helicopters, as their size on the ship's radar screen is relatively small. The installation of I Band Transponders on Scouts and Gazelles removed this issue and increased the ability for Royal Navy ships to track movement of the light helicopters.¹³¹ Emergency floatation devices were installed on all Gazelles, but only four Scouts due to issues with erosion. The most significant addition to the aircraft was the installation of a radar altimeter on all aircraft.¹³² The radar altimeter provided an indication in the cockpit of the approximate height above the ground. This greatly

¹²⁹Ibid.

¹³⁰Ibid.

¹³¹Ibid., 3-8.

¹³²McMahon, OP Corporate Report—Lt Hel, 13.

increased the safety of each pilot, especially in night and overwater flight where visual cues of the ground become harder to detect with the naked eye.

To further increase safety and the general survivability of the crews, they fitted aircraft with floor-mounted armor plates rated for small arms rounds.¹³³ This appears to have been unnecessary, as the aircraft were restricted to flight below 50 feet and decreasing the odds that the floor of the aircraft would be exposed during normal flight profiles. While aircrews wore armor-plated vests, the rest of the aircraft remained unprotected, though the additional armor provided increased morale and confidence for the aircrews.¹³⁴

The last significant acquisition attempt was for second generation Anvis night vision goggles (NVGs). Most AAC pilots were rated for night unaided flight with very few trained and qualified for the use of NVGs. With the expectation of night operations and the increased visual capability provided by infrared optics, they made requests for additional sets. 656 took seven total sets during the operation with the requested NVGs not arriving until after the conflict.¹³⁵ While NVG training received little emphasis, increased numbers in those who were qualified would have benefited the squadron a lot more than the SNEB rocket pod mods. A staff not accustomed to flying with NVGs underappreciated the increase in night flight capabilities.

¹³³Ibid., 14.

¹³⁴Ibid.

¹³⁵Ibid.

Maintenance and Sustainment

The maintenance support for the two squadrons was significant in the large number of personnel deployed as outlined earlier. This provided the ability to service aircraft both for scheduled and unscheduled maintenance twenty-four hours a day at the expected high tempo of operations. Also factoring in the large amount of flight hours, unit basic stocks and the Maintenance Support Detachment (MSD) holdings were scaled for thirty days of intense flying.¹³⁶ Operation Agila and other deployments provided basic guidelines for usage rates versus the acceptance of normal consumption of items in a garrison environment. Neither squadron planned on bringing any type of shelter to the island under which to conduct maintenance. While potentially cumbersome, the use of even a simple tarpaulin to break up the Antarctic winds or to hide the use of flash lights at night would be prudent based on the planning already conducted.

An oversight in aircraft maintenance existed with the increased aircraft weight after the new modifications. This was important for the Gazelles with the newly mounted SNEB rocket pods and the floor-mounted armor plates. The additions pushed the maximum all up weight of 3,970 lbs., which further stretched the load requirements during operations.¹³⁷ While it was not likely that any of the modifications would be scraped, maintenance personnel should have realized the potential effects on the aircraft of heavy loads. This manifested itself in additional rotor blades and increased inspection of areas where structural stress would manifest itself.

¹³⁶Ibid., 9.

¹³⁷Ibid., 3.

For sustainment, the integration of the AAC into planning was crucial. Unlike OP Agila, zenith pumps were packed in large amounts to facilitate the establishment of light helicopter compatible forward area refuel points (FARP).¹³⁸ Large quantities of 68mm rockets and SS-11 missiles were loaded with expectation of positioning aviation ammunition with forward area refueling points. Based on the terrain, the LFFI staff expected fuel and ammunition movements to be primarily by support helicopters. Forward area refueling points and the ability to quickly stand them up as far forward as possible were expected to be the limiting factors in the ground force's operational reach.

Training

656 AAC's commander and staff sought to augment the squadron's current proficiency level with training focused on the expected operational environment. The rapid deployment found every spare minute dedicated to maximizing training time. A majority of it focused on the individual, while squadron collective training lacked the resources of time and space to execute. The absence of unit size exercises put the responsibility on small unit leaders to adapt during execution.

While sailing south, briefings and individual soldier tasks took precedence. Training focused on providing the individual 656 member with flexibility to react to whatever waited them in the Falklands. Classes covered topics from rendering first aid, communications and radios, to weapons training.¹³⁹ Briefings included the Falklands

¹³⁸Greenhalgh, "The Falklands War As Seen By Col J. Greenhalgh DFC."

¹³⁹T. Smith, WO2, UK, Squadron Routine Orders by Major C. S. Sibun AAC, Officer Commanding 656 Squadron Army Air Corps, 20 May 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

terrain and the Argentine military. As ammo and opportunities presented themselves, live fire practice took place on the ship's deck. The 20th of May serves as a typical day sailing south for the 656 main body. Figure 2 shows the routine and training schedule for Squadron.¹⁴⁰

ROUTINE AND SQUADRON TRAINING FOR 20 MAY 82	
0630	Reveille
0730	Room Inspection
0800-0900	Breakfast
0830	5 Inf Bde Cdr Brief
0915-1015	Geneva Convention Class
1015-1115	Patrol and Ambush Drills
1130-1230	PT
1300-1400	Lunch
1400	OC's Address
1430-UTC	Clean Weapons and finish packing kit
1800-1900	Dinner

Figure 2. Routine and Squadron Training for 20 May 1982

Source: T. Smith, WO2, UK, Squadron Routine Orders from Major C. S. Sibun AAC, Officer Commanding 656 Squadron Army Air Corps, 19 May 1982.

At the completion of training, the commander administered quizzes checking the readiness and comprehension of the taught lessons. They also emphasized what the commander thought was critical information for 656 to understand. Sections covered

¹⁴⁰T. Smith, WO2, UK, Squadron Routine Orders by Major C. S. Sibun AAC, Officer Commanding 656 Squadron Army Air Corps, 19 May 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

general knowledge, Geneva Convention, signal, map reading, first aid, NBC, weapons training—patrols—ambushes, and duties of a sentry.¹⁴¹ An example of the information contained in the quiz comes from the Geneva Convention with questions varying from “If you are captured what four pieces of information are you obliged to give your captors?” to “What items of personal kit are you allowed to keep after your capture?”¹⁴² Both the classes and quiz represent information that aircrews and personnel needed to act during the operation without receiving direct guidance from the commander or higher. They also served as great opportunities for the commander to provide his guidance and commander’s intent on expectations for actions on the battlefield.

Helicopter and aircrew training was even more opportunistic in nature as weather and modification requirements dictated the frequency in which it occurred. For the 656 Scout detachment, now designated 5th Flight as part of 3 CBAS, ship training began on 20 April 1982 with deck landing training using HMS INTREPID while docked at Portland. Captain Greenhalgh reflected that “It seemed too easy, but of course HMS INTREPID was at anchor!”¹⁴³ The more difficult element of the training consisted on reading the large amount of Royal Navy aviation publications required before conducting air operations at sea off of a ship.

Further ship training occurred while enroute south, including a navigation exercise from the *Europic Ferry* “to prove a system worked out of being able to fly back

¹⁴¹656 Squadron Army Air Corps, 656 Squadron Army Air Corps—Quiz (Museum of Army Flying, Middle Wallop, England, Archive Box 113), 1.

¹⁴²Ibid.

¹⁴³Greenhalgh, “The Falklands War As Seen By Col J. Greenhalgh DFC.”

to a moving starting point.”¹⁴⁴ This was a challenge for aviators used to their landing points being in the same spot where they left them. Greenhalgh learned the hard way about how weather can cause further issues in finding a moving ship. Given a heading upon departure from the *Atlantic Conveyor* to fly back to *Europic Ferry*, he departed into weather with low visibility.¹⁴⁵ After four minutes on the heading, Greenhalgh still could not see the *Europic* and attempts at redirect from the *Conveyor* initially failed as he no longer had visual contact with any ship. Luckily, low on fuel, he spotted the *Europic* and landed. This stood as a cautionary tale when training does not exist and the operational environment exacerbates already tense situations. There was little need for the urgency of his return trip. Greenhalgh would later reflect “Why I didn’t go back onto the *Conveyor* for fuel and wait for the weather to clear, or ask the two ships to close, will always baffle me . . . too proud and stupid to, I expect.” While his reflection is a bit harsh, it does show the importance of evaluating risk at all times. A commander or an authority’s injection into the situation with a balanced decision towards safety could have eliminated the dilemma in the first place.

In anticipation of potential requirements for the upcoming amphibious assault, Vertical Replenishment training and night shipborne operations occurred. Vertical Replenishment consisted of underslung loads being transported from ship to ship or ship

¹⁴⁴J. G. Greenhalgh, CPT, UK, Commander’s Diary Narrative, Sct Flt 656 Squadron AAC, Army Form C 2118, Entry Date 27 April 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹⁴⁵Greenhalgh, “The Falklands War As Seen By Col J. Greenhalgh DFC.”

to shore.¹⁴⁶ Aircrews already possessed sling load training and it went quickly. Night flight at sea proved more difficult. Unaided night flight required the pilots to fly with only the ambient light present to see their surroundings. Some of the night training included use of ship controlled approaches with the ship directing the aircraft into the landing deck.¹⁴⁷ Without any personnel qualified on NVGs, unaided night flight remained the norm.

They fired aircraft weapon systems to test their functionality and for pilot familiarity. In the case of the Scout aircrews, only test SS-11 missiles were fired in the past. On 19 May, 5th Flight fired three missiles in combination with target acquisition and smoke marking training.¹⁴⁸ Pilots commented on how surprised they were at the launches' loud sound as all three missiles hit their targets.¹⁴⁹ The previous use of practice SS-11 missiles ensured the pilots' ability to target properly without the large cost of numerous live missiles. However, the initial shock and thrill of firing live ordnance will always be there for the first shot.

Gazelle pilots with the 656 main body finished modifications for the new SNEB rocket pods and began experimenting with them. Aircrews tested the pods in different

¹⁴⁶J. G. Greenhalgh, CPT, Commander's Diary Narrative, Sct Flt 656 Squadron AAC, Army Form C 2118, Entry Date 29 April 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹⁴⁷J. G. Greenhalgh, CPT, Commander's Diary Narrative, Sct Flt 656 Squadron AAC, Army Form C 2118, Entry Date 8 May 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹⁴⁸J. G. Greenhalgh, CPT, Commander's Diary Narrative, Sct Flt 656 Squadron AAC, Army Form C 2118, Entry Date 19 May 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹⁴⁹Greenhalgh, "Other thoughts and details."

flight profiles to find the best firing solutions. 3 CBAS test information combined with their findings for a best practice of SNEB rocket engagements. Testing determined that the maximum range was approximately 1500 meters with an optimal dive angle of 10 degrees.¹⁵⁰ Restrictions to firing all twelve rockets rapid fire came out of the 3 CBAS commander, Major Cameron, as his attempt at this resulted in his head ramming the top of the aircraft from the force of the firing.¹⁵¹ The restrictions and determined best use flight profile put the aircraft at a higher altitude during firing solution and vulnerable in an area devoid of land features for masking the aircraft. It provided the aircrews the flexibility of suppressive fire where no real capability existed. Unfortunately, time did not allow for the combined arms firing exercises with ground forces where further understanding of the best way to combine aerial rockets with ground maneuver.

The inability to conduct collective training and rehearsals went beyond 656 and affected the entire British Task Force. Commodore Michael Clapp, Commander Amphibious Task Group, and Colonel Julian Thompson, Commander Landing Force, both desired to conduct amphibious landing rehearsals while at Ascension Island.¹⁵² This required not only the land to accomplish this, but a work up to a night rehearsal in the correct formations. Ultimately, the full rehearsal could not happen based on the late arrival of 2 Para and the need for early movement south out of Ascension Island. This meant that 5th Flight did not practice their role in an amphibious landing, something for which they never trained. The potential hazards associated with an opposed amphibious

¹⁵⁰Cameron, 3 CBAS RM Report–OP Corporate, 12.

¹⁵¹McMahon, Falklands RM and AAC report, 3-10.

¹⁵²Clapp, 67.

landing were numerous and the 656 detachment was left to figure out how best to incorporate its operations into the impending assault.

Conclusions

A shared understanding is critical to a unit's ability to operate, especially for a newly created task force with members that have not worked together before. Early and constant involvement of the units in planning and information dissemination is critical. To prevent units from being burdened with too much interaction in higher headquarters' preparation, the use of a knowledgeable liaison is an effective tool to ensure collaborative and parallel planning is occurring. Plans and operations with liaison input facilitate a greater connectedness with additional flexibility for the overall commander to adapt later during execution. The establishment of Major McMahon as the SO2 Lt Hel did exactly that as 656 was incorporated into the planning and preparation. A shared understanding of the environment and the commander's intent existed where it did not during Operation Agila.

Defining the operational environment is needed for a commander and staff to properly understand and visualize the conduct of operations. All information desired will rarely be available and staffs will need to create the most complete picture that is possible based on the intelligence assessments present. More important than the mere visualization of the operational environment is understanding how a force will interact within this visualization. An evaluation of how the terrain, weather, enemy forces, and other factors dictate the capabilities of a unit. Understanding the potential risks will allow the commander to mitigate them through different measures prior to mission execution. 656 AAC did this through aircraft modifications, increased maintenance support, shipborne

training, and informational classes. While not all measures will be effective, it provides the unit with flexibility in its adaptation of the plan.

In an austere fiscal environment, well informed decisions need to be made for what programs will receive funding and which will not. These decisions should be related to what the unit's mission is and what resources they will need to accomplish them. In the case of the 656 AAC and other light helicopter units, reconnaissance in a hostile environment was part of their mission set. While reconnaissance does not necessarily mean that direct contact is inevitable, it is likely and the ability of an aircrew to protect itself should be considered. Just as a ground scout would not conduct reconnaissance without a rifle, it was unreasonable to think the Gazelle would not need some type of self defense weapon system. It is clear that the AAC community understood this and simply lacked the funding from MOD to conduct the needed modifications. Acquisition of new equipment should focus on what the equipment will be used for and not completely on financial considerations.

An understanding of how command and control structures are formed and the requirements to create them should also be taken into account when modifying aircraft. Limitations in C2 often come down to either a lack of shared situational awareness or radio transmission and reception limitations. Operational reach is restricted by endurance and part of a unit's endurance is their ability to communicate tasking changes and reports. Aircraft potentially waste valuable fuel and blade time when changes in missions are not given to the aircrew because of their distance from the HQ. Protection also becomes an issue when the aircraft cannot properly integrate into the established air defense system and the airspace at large.

A strategic lesson is also seen in the preparation of the task force to head south. The use of military power as leverage in diplomatic dealings is a very real bargaining chip that is used often. However, when military power is leveraged without a coherent plan with a set strategic endstate, the threat loses some of its potential power. An established strategic endstate allows for the proper execution of operational art and the tying in of planned tactical actions to achieve the stated political goals. This creates the ultimate understanding of the operational environment and facilitates detailed planning versus assumption laded preparation. It also provides credibility to military pressure with measured assertions that show a clear resolve to others.

Whether the Argentine junta did not take the deployment of the British task force as a credible military threat did not matter for 656. The forward detachment would find itself in its baptism of fire during the landings at San Carlos with the rest of the squadron on their heels. The hellish terrain and the determined enemy would put the preparations of 656 to the test and require innovative and initiative oriented aircrews ready to adapt to the challenges they faced.

CHAPTER 4

OPERATION CORPORATE EXECUTION

There were grim descriptions of the carnage at Goose Green. The reality of war had forced many to look life a little more squarely in the face.

—Major W. A. McMahon,
Falklands Royal Marine and Army Aviation Report

During the early morning of 21 May 1982, the amphibious assault on San Carlos began with naval gunfire as those sailing into the harbor had a “surreal ringside seat” to the impact of shells against the dark sky.¹⁵³ Soldiers and sailors established footholds on land, moving forward to capture the high ground surrounding the San Carlos waters and finish the seizure of a bridgehead for follow on forces. The planning and preparation were complete. The Land Forces Falkland Islands Commander disseminated his intent for the Operation Sutton amphibious landings. It now fell on the subordinate leaders to carry out the plans and to adapt to the operational environment as needed. The unforgiving terrain and weather provided immediate challenges to helicopter operations. Enemy forces threw in their own attempts to disrupt the operation. 5th Flight and the rest of 656 would be challenged continuously, meeting each one with tenacity that the squadron was famous for. The flexibility provided through preparation gave 656 the tools they needed to carryout adaptation through innovation and an aggressive initiative that ensured many British soldiers and marines would live. This chapter highlights how the flexibility set in the preparation phase translated to the realities experienced on the East Falkland Island and the adaptations required for the changing operational environment.

¹⁵³Greenhalgh, “Other Thoughts & Details from JG Greenhalgh DFC.”

The Enemy Votes

The preparations and the planning for Operation Sutton, the amphibious landings at San Carlos, were complete. The soldiers, sailors, and marines of the task force prepared their equipment and attempted to rest. In conjunction with Special Force landings and diversions in vicinity of Goose Green, the landings started in the early morning dark of March 21. It was now time for the Argentine forces to “have their say” about the British plan. The light helicopters, vital in their roles during the initial stages of the operation, were one of the first elements to gain contact with enemy soldiers.

At 0800 during the initial landings of Operation Sutton, Gazelles with 3 CBAS departed *Sir Galahad* for an escort mission of Sea Kings transporting equipment to establish Rapier sites.¹⁵⁴ Rapiers provided major ground to air missile capabilities in portable form and were essential to creating an air defense umbrella around the San Carlos area during the amphibious assault. The two Gazelle aircraft each contained the floor armor and Matra SNEB rocket pod modifications with their port doors removed for the manning of a general purpose machine gun mounted there.¹⁵⁵ Prior to the escort, the Gazelle flight conducted an armed reconnaissance of the proposed Rapier site in vicinity of Hospital Point and verified it was clear of enemy personnel.¹⁵⁶

¹⁵⁴Christopher Hobson, *Falklands Air War* (Hinkley: Midland Publishing, 2002), 77.

¹⁵⁵Cameron, 3 CDO BDE AIR SQN RM Report–OP Corporate, Annex F, Aircraft Casualty Report–Gazelle CX XX411 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹⁵⁶W. A. McMahon, MAJ, UK, Falklands Royal Marine and Army Aviation Report (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 3-30.

After refueling, the Gazelles split off and partnered with one of the Sea Kings with their sling loads off of the Canberra. Each aircraft positioned themselves off of the side of the Sea King for quick suppression with their SNEB rockets or the general purpose machine gun, if required. Each pair maneuvered forward as fast as the sling loaded Sea Kings would allow without causing issues with their load. The first group with Sergeant Evans and Sergeant Candlish noticed that their Sea King passed Hospital Point, the intended Rapier location, and were now well forward of the landings by 3 Para around the San Carlos settlement. Realizing their mistake, the Sea King began a rapid 180 degree turn back west with their Gazelle escort following. As Sergeant Evans leveled the aircraft at 40 ft AGL and 80 knots from its turn to port, small arms fire came at the aircrew from the 3 o'clock position.¹⁵⁷ The fire originated from troops of Equipo Combat Guemes as they egressed east during the landings.¹⁵⁸ They had to ditch their aircraft due to tail rotor and engine damage in the nearby water with the Argentine troops continuing to fire on the crew as they attempted to make it to dry land.¹⁵⁹ Shortly after swimming to the shore, they witnessed Lieutenant K Francis and Lance Corporal Giffin's Gazelle take small arms fire and crash into a hillside near Clam Creek.¹⁶⁰

Although 656 aircrews were not part of these actions, the preparation and flight techniques for the 3 CBAS were fairly similar, as well as the modifications to their

¹⁵⁷Cameron, "3 CDO BDE AIR SQN RM Report-OP Corporate," Annex F, Aircraft Casualty Report-Gazelle CX XX411 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹⁵⁸Hobson, *The Falklands Air War*, 77.

¹⁵⁹McMahon, Falklands RM and AAC Report, 3-30.

¹⁶⁰*Ibid.*

aircraft. The added floor armor did little to protect the aircrew in their normal flight pattern of low level flight of approximately fifty ft AGL. Given this low altitude and higher airspeeds, there was little chance that the underbelly of the aircraft would be exposed except in steep turns.¹⁶¹ The aircrews did not wear their issued body armor was not worn by the aircrews.¹⁶² However, with the aircraft doors off, the crews enjoyed little protection and body armor became a must for the rest of the flights.

Little opportunity presented itself to use the other modification of the Matra SNEB rockets meant for self-defense. With a required attack dive angle of approximately 10 degrees and a range of at least 800 meters, there was no reasonable chance that the aircrews could position the aircraft for firing rockets against immediate targets. Given the low level flight, the aircrews needed not only to identify the target, position themselves far enough away to shot, but also conduct a maneuver commonly termed a “bump” in which the aircraft is put into a rapid climb while slowing down so that a proper dive angle can be gained with the increased altitude. This further exacerbated the lack of any terrain to mask the helicopters movements. A potential solution to the presented issues of self-defense fires is aircraft teaming. Aircraft teaming was essentially “a team with one or more aircraft concentrating on the main task and other aircraft operating as cover against

¹⁶¹W. H. McMahon, MAJ, UK, Letter to Brigadier C. F. Jebens, CBE, HQ AAC UKLF, 7 July 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 2.

¹⁶²Cameron, “3 CDO BDE AIR SQN RM Report–OP Corporate,” Annex F, Aircraft Casualty Report–Gazelle CX XX411 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

the air or ground threats.”¹⁶³ Aircrews adapted and flew in teams when possible or when the enemy threat was increased. However, the lack of aircraft numbers caused many pilots to brave flights solo and adapt in other ways.

The light helicopter fared worse against the threat of fixed wing aircraft, in particular the slow moving Pucara. With its name taken from the pre-Colombian castles located throughout the previous Incan Empire, the twin-engine turboprop aircraft represented a flying fortress.¹⁶⁴ It was an agile ground support aircraft, often referred to as a counterinsurgency aircraft because of its ability to conduct reconnaissance and security tasks in dense foliage against dismounted personnel. The turboprops provided the Pucara with the capability of slow flight speeds that increased its ability to target the slower moving helicopter with its two 20mm Hispano guns, four 7.62mm machine guns and 2.75 in rockets.¹⁶⁵

On 28 May, two Scouts from 3 CBAS discovered the Pucara’s capabilities while in support of 2 Para’s attack on Goose Green. Two Pucararas, under the mission command of Lieutenant Gimenez, flew to Goose Green to support the Argentine defense. Identifying the two Scouts, Gimenez assigned responsibility for each helicopter and the flight began firing rockets in salvo.¹⁶⁶ Captain Jeff Niblet, the Scout mission commander

¹⁶³C. F. Jebens, Brigadier, UK, Falklands Campaign–Lessons Learnt, 3 August 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 4.

¹⁶⁴Military Periscope.com, “IA58 Pucara attack/COIN aircraft,” <https://www.militaryperiscope.com/weapons/aircraft/attack/w0000320.html> (accessed 10 May 2014).

¹⁶⁵Santiago Rivas, *Wings of the Malvinas: The Argentine Air War over the Falklands* (Manchester: Hikoki, 2012), 327.

¹⁶⁶*Ibid.*, 113.

for the flight, briefed the aircraft to break left and right with both aircraft turning at such a drastic angle that their respective skids touched the ground.¹⁶⁷ Unfortunately, the quick maneuver failed to lose the track of the slow and agile Pucara as its rockets hit the lead Scout, killing Sergeant Richard Nunn and flinging Sergeant Bill Belcher out of the aircraft badly injured. Niblett's aircraft only evaded when the 2 Para elements fired small arms at the attacking aircraft, sending the Pucaros and their flight crew back to Port Stanley.

The Pucara proved much more difficult to out maneuver than the faster Argentine Mirages and Skyhawks. The standard technique of turning towards the enemy fixed wing aircraft to cause their dive angle to be too great to shoot did not work for the agile Pucara. It could also operate at lower flight levels putting it at less risk of the British air defense Rapier of acquiring it. Both the Scout and Gazelle lacked any real capability to accurately engage fixed wing aircraft. Air coverage provided by British Harriers eliminated a majority of the Argentine air threat. However, weather often hampered their launch from the aircraft carriers while Argentine aircraft could depart from Stanley in less than ideal conditions. Ultimately, the best internal defense for the light helicopters would be aircraft teaming with one acting as a lookout. The continued high demand for helicopter support often negated this with commanders accepting additional tactical risk to support ground forces. Continued aerial attacks on Port Stanley's airfield and air to air combat losses eventually resulted in the mitigation of the Pucara all together. 656 aircrews were less fortunate as other challenges continued throughout the conflict.

¹⁶⁷Ibid.

Weather and Terrain Challenges

The environment proved to be just as challenging of an appointment for the 656 aircrews. Lack of vegetation and major terrain features prevented the aircraft from masking behind cover or concealment. Aircrews compensated through low altitude flying profiles to reduce the chance of aircraft being silhouetted against the sky. This only worked for enroute flights with reconnaissance and armed actions relying on standoff and friendly ground forces for protection. The terrain also offered little identifiable terrain for navigation for low flying aircraft and those flying at night.

The night afforded little relief from large workloads in the light helicopter cockpits. For 656, none of the aircrews were trained on the use of NVGs. Pilots conducted unaided flight, which relied on the ambient light present in the area of operations and the proper marking of landing areas. Combined with the frequent cloud cover over the islands, this caused very dangerous flying conditions. A 5th Flight mission in the early morning of 29 May best illustrates the dangers when elements combined for less than ideal flying conditions.

A radio operator woke Captain Greenhalgh at about 0300 and notified him of a request for CASEVAC from Goose Green.¹⁶⁸ He gathered two crewmembers and found the aircraft windshield iced over from the low temperatures and high moisture in the air. With the engines running and the aircraft thawed, the aircraft departed for the grid of the patient. Greenhalgh established contact with 2 Para over a communications frequency and began the approach. Without NVGs and the very low ambient light levels, the aircrew needed visual contact of some kind to verify where to land. 2 Para showed a

¹⁶⁸Greenhalgh, "Other thoughts and details."

green flashlight and the color was verified over the radio to ensure Argentine forces were not attempting to deceive the aircrew.¹⁶⁹

With the stretcher and patient loaded, Greenhalgh departed towards Sussex Mountains as the light rain flew on the rising terrain. The aircrew attempted to gain altitude to provide an additional buffer with the ground with low visibility and entered a thick cloud around 200 ft AGL.¹⁷⁰ Gaining altitude to avoid the mountain put the aircraft into icing conditions as the wet aircraft began to freeze. Ice on the rotor blades caused them to shutter and vibrate with the weight. A series of attempts to descend out of the clouds commenced, finding the ground only with slow flight and the use of the white overt landing light. The low level fuel light came on as Greenhalgh realized he had no idea where he was.¹⁷¹ Based on established procedure, he turned the aircraft to a heading of 270 degrees to fly towards the Falklands Sound and safety. A radio call to 3 CBAS commander Major Peter Cameron led to an effort for all radio stations to listen for the Scout's rotor noise and luckily one of the 3 CBAS flights heard Greenhalgh to the south of them.¹⁷² They landed at the Sound and got the patient to the field hospital in time. Greenhalgh later reflected, "In all the CASEVAC took 60 mins of intense night flying but to me it seemed like just 5 mins!"¹⁷³

¹⁶⁹Ibid.

¹⁷⁰Ibid.

¹⁷¹Ibid.

¹⁷²Ibid.

¹⁷³Ibid.

Greenhalgh's experience, as harrowing as it was, would not have been as bad with the use of NVGs. Identification of landing zones is eased with the ability to see without overt light use and less likely to give away positions to the enemy. More importantly, visual contact with the low level clouds would have prevented flight into them in the first place. A report after the conflict commented that this absence "was a major problem which on many occasions prevented us fulfilling our role at night."¹⁷⁴ The prevented role accomplishment mentioned in the report remained true for reconnaissance, security, and armed action tasks as acquisition of the enemy was near impossible without lots of ambient light. Resupply and CASEVAC continued only because of the determination of the aircrews to support the ground forces. On numerous occasions they used rudimentary techniques to locate the landing zone and to conduct essential ground support.

Another flight hazard demonstrated in the Goose Green CASEVAC actions was weather. Cold temperatures with frequent low clouds and rain presented numerous challenges for the aircrews. The accumulation of ice on light helicopters, like that of Greenhalgh's, is extremely dangerous as it causes undue stress on the rotor blades through additional weight and vibrations. Ice also prevents the free flow of air into the engine. Clouds hampered visual flight increasing the hazard of flying into higher terrain or the disorientation of the aircrew resulting in unusual altitudes and crashing into the ground. For the aircrews, little could be done to adapt to the weather and terrain. It was a constant that was fully respected and avoided when possible. However, no mission was

¹⁷⁴Jebens, Falklands Lessons Learnt, 3.

cancelled due to weather.¹⁷⁵ Delays and disruptions did occur, but each task was carried out, including some aircraft cautiously hover taxiing¹⁷⁶ to get a patient out of harms way.

Taskings on the Fly

“Out of our group of three, *Atlantic Conveyor* has been hit and is on fire on the Port side in the area on the accommodation. At 2030 hrs, the fire is out of control and she has been evacuated to *HMS Alacrity* and *HMS Broadsword*. Presumably it is now only a matter of time before she also sinks,” from 5 Flight Commanders Diary Narrative, 25 May 1982, Captain J G Greenhalgh.

The sinking of the *Atlantic Conveyor* took with it 10 Wessex and four Chinook support helicopters.¹⁷⁷ The thoughts on air assaults across the island, the rapid movement of artillery from battle to battle, and the movement of soldiers and marines with little need for long distance marches disappeared into the water as well. The ground forces would be forced to “yomp,” covering East Falkland on foot under heavy kit. The role of light helicopters also changed as each squadron needed to pick up the essential tasks that only rotary wing aviation could accomplish.

Major McMahon’s tasking procedures outlined in the LFFI SOP provided the foundation to adapt with the loss of so many support helicopters. The ground brigades

¹⁷⁵C. S. Sibun, MAJ, UK, Letter to BG Jebens, 7 July 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 2.

¹⁷⁶Hover taxiing is the process of slow hovering of a helicopter at speeds below the conditions for effective transitional lift. This profile is used mostly in movement around an airfield and puts the aircraft in danger when enemy contact is possible due to the slow speeds and inability to maneuver the aircraft quickly.

¹⁷⁷Max Hastings and Simon Jenkins, *The Battle for the Falklands* (New York: W. W. Norton and Company, 1984), 227.

maintained direct support from their respective light helicopter squadrons. However, the requirement at the LFFI headquarters increased drastically to the point where three light helicopters could be fully employed all day.¹⁷⁸ No more than two helicopters could be dedicated with the aircraft and aircrews remaining at their squadron's location. Allocating the helicopters in this manner allowed the squadron to manage aircraft and aircrew flight hours to better facilitate their unit's endurance.

There were also numerous disadvantages besides the lack of enough aircraft. Locating at the squadron's area caused aircrews to fly to either San Carlos or the ships in the Sound, using precious flight time and fuel in what would amount to fifty miles of separation as the ground forces continued east.¹⁷⁹ As the aircrews were not collocated with the LFFI tasking cell, communication of the mission relied on long range radio traffic. Processing of the helicopter requests required planning until the early morning hours of the actual day for tasking, often until 0300. During this time of the morning, the use of high frequency radios presented an issue as certain frequencies seldom worked in the early morning hours due to solar flares.¹⁸⁰ Combined with Argentine attempts at jamming or faking radio transmissions, aircrews usually found out their mission for the day only upon arrival.

To overcome these issues, McMahon met with the 656 AAC and 3CBAS commanders on 5 June to discuss ways to improve the system.¹⁸¹ All three agreed that

¹⁷⁸McMahon, RM and AAC Falklands Report, 3-39.

¹⁷⁹McMahon, OP Corporate Report–Lt Hel, 5.

¹⁸⁰McMahon, RM and AAC Falklands Report, 3-40.

¹⁸¹Ibid., 3-42.

efficiencies needed to be gained in the tasking system. Initially, taskings filtered through the ground brigade's respective air tasking cell. This added additional time to process the requests without any real beneficial staff work. The three agreed to remove the brigades from the LFFI headquarters tasking chain. Though McMahon pressed for locating the aircrews for tasking at the headquarters for better planning and more flight time, the commanders asked to keep the same system.¹⁸² The advantages of consolidated aircraft and aircrews presented the commander's with increased flexibility to adapt to the tempo of ground operations.

Even more frustrating for McMahon was the random retasking of aircraft by ground commanders while the aircrews were enroute to HQ LFFI. On 9 June, a Gazelle dispatched to the headquarters to take General Moore forward to assess the situation confirmed its departure enroute.¹⁸³ After 30 minutes of waiting without word of the aircraft's whereabouts, the annoyed General reacquisitioned another Gazelle. Later, they discovered that a brigade commander retasked the aircraft without informing anyone.¹⁸⁴ This was the norm rather than an isolated incident. It represents the struggle aircrews often faced when asked to perform a task that has a direct effect on the ground soldier. The perception is that the higher tasking is never as important than that of the unit on the ground. Whether this perception is correct given a certain circumstance, it is often irrelevant as the aircrew often does not have the situational awareness of the entire operational environment.

¹⁸²Ibid.

¹⁸³Ibid., 3-47.

¹⁸⁴Ibid.

The greatest flaw with the LFFI HQ tasking process was its inability to provide a commander's purpose and intent to the aircrew. Without a clear understanding of what the mission for the day was, it would be easy to override a tasking seen as more important with the ground commander. This is not to suggest that the Gazelle pilot in this situation was disregarding direct orders or operating outside of a commander's intent. The pilot executed initiative within the overarching intent of his squadron commander to support the ground soldier whenever possible.

Initiative manifested in many positive ways, in particular the overall mission change of the light helicopter. Originally seen primarily in its reconnaissance and armed action role, the lack of support helicopter meant that Gazelles and Scouts were now the primary CASEVAC platform. Even when available, ground units preferred the light helicopter to the bigger Wessex or Sea King helicopters as the smaller aircraft could fly directly to the rear of the ground HQ while the other helicopters required landing zones further away from enemy contact.¹⁸⁵

Scout aircraft also had the ability to attach CASEVAC pods. The pods attached to the side of the aircraft and allowed for one stretcher with patient to be enclosed for the flight. Seats and SNEB rocket pods removed from the Gazelle provided room for seriously wounded as it did not have CASEVAC pods or the ability to fit the standard size stretcher.¹⁸⁶ The other limitation presented itself in the large amount of additional weight in the form of the aircraft modifications. The floor armor alone put the Gazelle

¹⁸⁵C. P. Cameron, MAJ, UK, 3 Commando Brigade Air Squadron Royal Marine Report-OP Corporate, 24 August 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 6.

¹⁸⁶Ibid.

close to its allowable weight without SNEB rocket pods attached. However, the pilots stripped what they could from the aircraft and adapted their flying techniques to adjust for the limited power available to the aircraft. This included slower and lower approaches to the pickup sites, which exposed the aircrews longer to potential enemy fire. Ultimately, the use of 656 AAC Scouts and Gazelles saved over 195 personnel, including at least 20 Argentines.¹⁸⁷ Pilots conducted these missions day and night. An infantry battalion commander informed Brigadier Jebens “that a number of his men would not be alive today had it not been for CASEVAC carried out by a Scout under these conditions.”¹⁸⁸

656 AAC Scouts also saved lives in their adapted use of SS-11 missiles. The terrain and the lack of enough support aircraft to deploy artillery across the battlefield presented a dilemma for the ground forces. Naval gunfire filled the gap at night, but required ships to reposition during the day under the Argentine exocet missile threat. This resulted, as Jebens described it, “in the justifiable misuse of helicopter ATGW [air to ground weapon] in the anti-personnel role.”¹⁸⁹

The first planned use of armed Scouts providing fires occurred in a mission to take the Swan Inlet House. Believed to be occupied by an enemy patrol, two Scouts escorted an assault force lifted to the target with a Sea King and a Chinook.¹⁹⁰ During the landing and ground assault, the Scouts fired four SS-11 missiles in accordance with the

¹⁸⁷C. S. Sibun, MAJ, UK, Annex A: CASEVAC to 656/AAC/OP/C, August 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

¹⁸⁸Jebens, *Falklands Lessons Learnt*, 2.

¹⁸⁹*Ibid.*

¹⁹⁰*Ibid.*, 3-40.

fire plan as the assault force quickly occupied the house absent of enemy forces. Though no resistance existed, the mission proved the viability of a missile's use in the absence of indirect fires. The Scout provided maneuverable fires in terrain that prevented rapid ground movement of larger artillery systems. The operational reach of 5 Inf Bde was now extended further with the ability to increase the tempo with responsive, rapid fires.

Balancing Endurance and Momentum

Maintaining the high operational tempo required to fill all of the taskings challenged both the aircrews "and the aircrafts" endurance. The demand on light helicopters required day and night missions that pushed the limits of the pilots. Long hours spent flying stressful and demanding mission sets pushed aircrews against the edge of fatigue.¹⁹¹ With a closely monitored crew rest program, 656 could attain approximately fourteen days of continuous operations before reaching exceeding crew capabilities.¹⁹² The Gazelle Company of 3 CBAS fared much better with a two to one pilot to aircraft ratio. They accomplished this higher ratio through the limited deployment of only nine of their allocated twelve Gazelles, as well as removing squadron members from courses. More importantly, 3 CBAS integrated battle casualty replacements early so that the aircrews trained and prepared as part of the squadron.¹⁹³ The larger ratio facilitated day

¹⁹¹Jebens, Falklands Lessons Learnt, 3.

¹⁹²McMahon, OP Corporate Report—Lt Hel, 11.

¹⁹³Ibid., 5.

and night operations for the entire 32 days of operation with the average pilot averaging 70 hours.¹⁹⁴

Barely at a one-to-one ratio of pilots to helicopters, 656 AAC pushed their limits to maintain their momentum. At the end of operations, aircrews exhibited signs of high fatigue as few opportunities for rest presented themselves. The squadron's battle casualty replacements were not integrated as they were in 3 CBAS and instead remained in England. While the squadron required no replacement crews, if the conflict lasted longer and required battle casualty replacements, then the new aircrews would have required training that is difficult to accomplish with a high operational tempo during combat.

The aspect of crew rest is often misunderstood by individuals outside of aviation. However, it remains a real consideration to ensure that accidental risk is mitigated as much as possible. There is a breaking point for aircrews and their capabilities to accomplish the mission at a high level of execution. The need for a higher momentum up front translates to the squadron's culminating point being reached earlier than desired. It was the determination of the 656 AAC aircrews that pushed to support the ground soldier and continue the momentum of the ground brigades.

Combat flying and mission's requirements pushed the aircraft to their limits as well. The enemy threat required rapid flight maneuvers that are not typical for noncombat flight. The greatest stress on the aircraft existed in weight. Large amounts of modifications to include items as big as the SNEB rocket pods pushed the aircraft near its

¹⁹⁴Cameron, 3 CBAS RM Report-OP Corporate, 3.

All Up Weight, often requiring crews to operate at or just above the limits stipulated in the operating data manual.¹⁹⁵ This reduced the power available for the aircraft.

To adapt to the decreased power margins, pilots developed limited power techniques.¹⁹⁶ Most of the time these techniques resulted in either using the maximum available power to gain altitude and then to trade the altitude through forward flight to gain the airspeed required. In more hostile situations, takeoffs required more distance as the aircraft stayed lower to the ground until enough airspeed is achieved to gain altitude without slowing down. During a CASEVAC mission, Captain Greenhalgh found his aircraft “was severely overloaded and refused to fly until we gained translational lift and in so doing we bounced across the heath and bog—thank goodness for skids!”¹⁹⁷

Flying at the limits of the All Up Weight caused a descent amount of aircraft wear and tear. Besides damage caused on the skids as described above, the rotor system of the aircraft showed signs of repeated stress from maneuvering overweight helicopters. A total of four Scout tail rotors required replacing when cracking at their roots became visible, most likely from overloading.¹⁹⁸ Aircrews and maintenance personnel understood the risk of flying at or above All Up Weight, but also balanced this with the need to support on-going operations. Maintenance crews inspected areas likely to show the signs of stress while aircrews informed personnel when they exceeded All Up Weight limits.

¹⁹⁵Ibid., 20.

¹⁹⁶Ibid., 21.

¹⁹⁷Greenhalgh, “Other thoughts and details.”

¹⁹⁸McMahon, OP Corporate Report—Lt Hel, 9.

It is often said that maintenance drives operations for aviation. Never was it truer than in the Falklands as maintenance crews kept the aircraft serviceable in less than desirable conditions. Working conditions challenged technicians as frequent rain, high winds, and the occasional snow complicated simple maintenance tasks.¹⁹⁹ The lack of hangars or larger enclosed areas big enough for aircraft existed, so maintenance crews braved the weather to ensure aircraft were operational. They also worked at night to ensure the next day's aircraft were serviced and ready for flight. The lack of cover complicated the need for light with personnel using parachute screen to block out the use of flash lights.²⁰⁰ When not fixing the aircraft, 656 maintenance crews slept in two man tents until their relocation to Darwin and Goose Green where cow barns and pigsties became makeshift homes.²⁰¹ They adapted to the conditions as needed. Little thought is given to crew rest for maintainers as the perception goes that they are not going to be flying and require less sleep. This does not bode well for the tired technician conducting specialized work on an aircraft expose to the elements.

The true brilliance of the REME elements shown through in adaptations to servicing procedures. Maintaining up to date documentations on the servicing and general maintenance of an aircraft is critical in any situation. With constant air threats, bad weather, and the high operational tempo, the difficulty of documentation increased and affected the rate at which aircraft could be turned over to flight crews. To ensure aircraft

¹⁹⁹656 SQN AAC LAD REME, Post Operation Report–OP Corporate 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

²⁰⁰Cameron, 3 CBAS RM Report–OP Corporate, 23.

²⁰¹656 SQN AAC LAD REME, Post Operation Report–OP Corporate 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112).

availability and simplify documentation, minor repairs such as small cracks in the windshields went undocumented.²⁰² This decision reflected the acceptance of risk associated with undocumented repairs going unfixed due to not being captured in the aircraft's logbook. However, knowledgeable maintainers were trusted with determining what constituted minor repairs and given the initiative to act accordingly. Squadron commanders also provided their respective REME commanders the authority to extend aircraft component changes and to delegate the power to create flexible servicing schedules by extending dates by fifteen percent.²⁰³ As a result of these provisions, both squadrons maintained an aircraft availability rate in excess of ninety percent.²⁰⁴ This availability rate maintained the extremely high momentum required at the operational level while maintaining the endurance of 656 AAC for the near future.

The major issue for maintaining the tempo of the squadron came in the form of fuel. While 656 found itself the primary resupply facilitator for 5 Infantry Brigade and 3 Commando when required, neither brigade provided proper sustainment planning or support for the light helicopter squadrons.²⁰⁵ Initially, Scouts and Gazelles conducted refueling and rearming on the ships in San Carlos bay with difficulty. The ship's flight decks were busy with support helicopters flying personnel and equipment for the

²⁰²Ibid.

²⁰³McMahon, OP Corporate Report—Lt Hel, 9.

²⁰⁴Ibid.

²⁰⁵McMahon, McMahon RM and AAC Report, 3-41.

landings. Ships also changed their locations and callsigns frequently, causing great difficulty for returning army aircraft to find their destination.²⁰⁶

Light helicopter eventually moved aviation fuel contained in 45 gallon drums and zenith pumps to forward area refueling points due to the lack of support helicopters.²⁰⁷ Light helicopters also facilitated Scout and Gazelle specific ammunition movements forward as their ammunition often differed from that of the navy aircraft. A Sea King and Chinook did eventually move fuel in air portable fuel containers and a pillow tank forward to Fitzroy when 656 AAC established its headquarters there.²⁰⁸ Due to the size of a pillow tank, selection of its deployment must be carefully considered as it presents a large target to the enemy.

The biggest find for the British forces constituted the Argentine pillow tank at the Goose Green air strip, which was thoroughly used until dry by 656 and 3 CBAS aircrews.²⁰⁹ Concern initially existed at the quality of the Argentine fuel and whether or not Argentine forces contaminated the source on purpose. Time was short and the need to test the fuel required a risky innovative technique. A helicopter received fuel from the pillow tank and then hovered just above the ground for approximately ten minutes.²¹⁰ The technique was repeated for each captured source with no adverse effects experienced by the participating aircraft.

²⁰⁶McMahon, OP Corporate Report–Lt Hel, 10.

²⁰⁷Ibid.

²⁰⁸Ibid.

²⁰⁹Ibid.

²¹⁰McMahon, RM and AAC Report–Lt Hel, 3-39.

Planners cannot properly plan on using captured fuel as it might be tainted by enemy forces or not even be captured. However, its quick testing and use presented a major help to maintaining the use of light helicopters well forward of San Carlos bay. Ultimately, it was the adapt use of the resources at hand or those found on the battlefield that ensured the sustainment of the squadron. Major MacMahon put it best when he observed the lack of the ground brigade's sustainment support and that "it was only the initiative and determination of the squadron which ensured that the vital CASEVAC and resupply well forward continued."²¹¹

Conclusions

The intensity of the challenges 656 AAC faced in the Falklands greatly overshadowed those experienced during earlier detachment deployments. Cloud cover created a small flying area often further obscured by rain and fog. Winds pushed the limits of the heavily modified and overweight aircraft to defy gravity. The enemy threat presented itself from all directions, even disrupting living areas with artillery fire and fixed wing bombing runs. Sustainment represented a delicate leash barely stretching enough for the high operational tempo desired and constantly threatening to break. However, the squadron and its personnel persevered. On 14 June 1982; the Argentine Commander Brigadier General Mario Benjamin Menendez surrendered with the city of Port Stanley returning to British control.²¹² The operation to take back the Falkland Islands ended in success.

²¹¹Ibid., 3-42.

²¹²Middlebrook, *Argentine Fight for the Falklands*, 276.

This success was far from guaranteed at the notification of the British Task Force sailing south. Planning and preparation created flexibility for the potential operations during the deployment. However, even the best laid plans change under enemy contact. This is where 656 AAC truly excelled. Their adaptation to the changing operational environment ensured that the initiative and innovation remained constant.

Upon first contact with the enemy forces, aircrews quickly adapted flight profiles and techniques. Flight crews realized the limitations of the SNEB rocket pods and did not force their use at the detriment of lost British lives due to hazardous flight profiles. Instead, a better understanding of how to mitigate risks associated with either using the environment to their advantage with weather and night conditions or the importance of more careful flight over ground not yet occupied by friendly forces. This required a direct adaptation to the accepted techniques trained for potential operations in Norway with no real terrain to mask the aircraft behind. This also required innovation when bad weather forced aircrews to fly in less than desirable conditions to provide lifesaving CASEVAC actions. Aircrews developed approach techniques to non-standard landing zones at night, often to within meters of heavy combat.

The mission sets envisioned for the light helicopter changed instantly with the sinking of the *Atlantic Conveyor*. A less adaptive organization might have continued to push the use of the Scout and Gazelle as intended. However, the staff structures quickly realized the potential and the operational environment as it was without support helicopters. Without hesitation, aircrews removed missiles and rockets to provide the ability for CASEVAC and resupply missions. Ground forces changed their priority and

commander's intent for the helicopters. The LFFI staff amended their helicopter requirements to reflect the reduced numbers of aircraft available.

Most impressive was the adapted use of the SS-11 missile in an anti-personnel role. With the lack of artillery due to the lack of air or ground transport capabilities, innovative officers decided to try the Scout as an aerial platform. Though this was definitely not new as the United States thoroughly used its gunships in Vietnam, there were no established techniques or practices for close combat support through British Scout aircraft. Lacking a true Argentine armor threat further pushed aircrews to look at ways to utilize the firepower available. With the first successful test initiated at the taking of the Swan Inlet House, the SS-11 missile provided its worth. During the fighting for the high ground surrounding Port Stanley, Captain Greenhalgh and his team showed the true capability of this type of action in destroying an Argentine gun battery firing on 2 Para.²¹³

While less thrilling and exciting, the most important adaptation occurred with the maintenance crews working in the rear. Innovative NCOs developed makeshift shelters for aircraft maintenance in harsh weather conditions and the threat of Argentine night attacks. Authority for risks involved with component replacement and major maintenance timelines was expertly delegated to the right frontline supervisors, ensuring an operational readiness rate any aviation commander would be jealous of. With the ground staff's lack of integrated aviation support planning, 656 AAC ensured their own sustainment without diminishing their own critical support to the ground commander. The squadrons utilized the use of captured pillow tanks despite the risks involved with the unknown fuel source. Aircraft moved fuel drums to forward positions to facilitate the

²¹³Greenhalgh, "The Falklands Campaign."

expanding needs for operational reach despite the limits put on the aircraft with the heavier loads. Without support to move containers forward, 656 AAC established living quarters in the spaces available with the best accommodations presented in the form of animal barns.

While some of the adaptations were highly successful, a part of it owes its success to the luck of timing and circumstance. One wrong turn during evasion from a Pucara, the attempt to climb too early during a heavy takeoff, or the choosing of the wrong altitude on a bad weather CASEVAC could all have resulted in disaster. However, luck often translates to an individual identifying an opportunity, evaluating the risks associated with it, and taking the initiative to take advantage of the presented opportunity. Adaptation and innovation are risky endeavors in combat as an unproven technique's failure may result in instant death. It is here that the true success of an army is gained. The commander providing guiding intent and providing resources for subordinate leaders to seize the initiative without direct oversight. 656 AAC, during Operation Corporate, stands as a model for the correct and successful application of mission command.

CHAPTER 5

CONCLUSION

195 total casualties evacuated

194.7 Gazelle flight hours (2–14 June)

393.4 Scout flight hours (21 May–14 June)²¹⁴

Greater than 90 percent aircraft operational readiness level.

These statistics represent the tangible results of 656 AAC's deployment in support of Operation Corporate. What is much harder to define are the intangibles, the items not easily captured in a quantifiable manner. Contained in these numbers, but not obvious is the zealous execution of assigned missions to ensure the success of the ground force. Captured in the CASEVAC total are dangerous missions carried out by skilled aircrews in terrible conditions to save fellow soldiers and marines. Embodied in the extremely high operational readiness rate are maintainers working through air raids and rain to provide aircraft for the fight. Taken as a whole, the numbers represent 656 AAC's critical role in the success of Operation Corporate.

However, 656 AAC's success was far from guaranteed based on the dangerous operating environment of the Falkland Islands. During Operation Agila, the squadron lacked integration into the higher headquarters both in planning and preparation. This caused issues in Rhodesia over incompatible refuel equipment and the overuse of aircraft and aircrews. The creation of flexibility through preparation and planning fell on the squadron staff itself, with training focused on the expected environment and acquisition

²¹⁴W. A. McMahon, MAJ, UK, OP Corporate Report–Lt Hel, 17 September 1982 (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 7.

of needed equipment reducing the overall tactical risks experienced. More importantly, 656 AAC proved to be a learning organization as its unapologetic after action reviews brought to light numerous issues and allowed for integration of the potential solutions into the squadron and higher operating procedures.

Planning and preparation for Operation Corporate incorporated many of the lessons learned from Operation Agila. Integration and a shared understanding manifested in the creation of a liaison position in the overall command structure while the AAC headquarters addressed concerns early with the MOD. Major efforts to provide flexibility for aircrews included aircraft modifications based on this shared understanding of the expected operational environment. Training furthered the flexibility, providing opportunities to fire live SS-11 missiles and the newly acquired SNEB rocket pods.

With the initial landings at San Carlos, the created flexibility met full force with the island's rugged terrain, the harsh Antarctic weather, and the determined Argentine forces. Aircrews adapted their flight profiles and tactics to provide vital CASEVAC and resupply operations. Further adaptation resulted in the unconventional use of the SS-11 missile against enemy personnel versus its antiarmor purpose. Maintenance commander's and ground crews ensured extremely high maintenance rates through adapting regulations and procedures based on experience and sound judgment calls. All of these elements combined in the successful liberation of the Falkland Islands.

Major McMahon's Reflection

This success is best captured in the writings of Major McMahon. Upon completion of the operation and after sailing back to England, McMahon consolidated his notes and captured his thoughts in a series of letters, memorandums, and reports.

Reflecting on the actions during the campaign, he stated “the lesson which stands out most of all in my mind having witnessed the action at relatively close quarters is that in war every plan will go wrong in some way or another and that one must always be prepared for the unexpected.”²¹⁵ It refers to the need to create flexibility through planning and preparation. This begins before the receipt of a mission and manifests itself in learning organizations through constant reflection and implementation in lessons gathered from experience.

For the time period directly affecting 656 AAC’s actions in the Falklands, the learning process began in Rhodesia. The squadron found itself in a unique challenge with their Operation Agila participation as it remained outside of the higher headquarters’ planning and without a shared understanding of the operating environment. Shared understanding provides the ability for all units to identify shared opportunities and risks. Without being afforded this common knowledge of the future environment, 656 created flexibility on its own. They mitigated tactical risk through hot weather and high altitude training, as well as aircraft marking identification. The staff recognized limitations of their equipment compared to the initial desired endstate and readied further aircraft and personnel for deployment. This furthered the flexibility aircrews needed while in Rhodesia. 656’s ability to adapt while in country greatly assisted the overall mission success of both the squadron and the entire operation. Leaders developed creative tactical solutions to the operational challenges presented by very large areas of operations and the rainy season. The milk run’s creation eased tensions from reintegrating individuals of an

²¹⁵W. A. McMahon, MAJ, UK, Falklands Royal Marine and Army Aviation Report (Museum of Army Flying, Middle Wallop, England, Archive Box 112), 3-67.

insurgency back into society. However, the true success of 656 AAC came after their flight back to England. Tough and honest after action reviews once the operation ended provided the ground work for the unit to learn from its mistakes and to incorporate these lessons for future flexibility in deployments.

Operation Corporate presented an opportunity for the squadron to enact the lessons recently captured. Integration and a shared understanding of the operational environment occurred through the early and often efforts of the higher AAC headquarters. This stood out most significantly with the appointment of Major McMahon as the SO2 Lt Hel representative for the LFFI headquarters. Logistical and unit limitations identified early provided the catalyst for increased sustainment planning, additional maintenance unit allocations, and the substantive modification of both the Scout and Gazelle aircraft. An understanding of how the light helicopters would operate in support of ground maneuvers facilitated training and classes meant to focus aircrews to the upcoming task. 656 AAC's establishment of flexibility through thorough preparation and planning set the stage for actions on East Falkland Island.

Major McMahon continued with his reflection: "Finally without the outstanding leadership shown by young officers of all arms I personally doubt that the admittedly excellent strategies and plans would have succeeded as quickly as they did and without greater loss of life."²¹⁶ The ability of lower-level leaders to take the initiative within the given commander's intent, adapting and innovating as the environment changed, represented the true essence of 656 AAC's success. This represents a modified definition for mission command. The staff planning and preparation provided through the

²¹⁶Ibid., 3-67.

conceptual and physical components, allied with an understanding of the commander's intent facilitated subordinate's ability to carry out innovation and adaptation in reference to the moral component. Aircrews adapted during flights where enemy forces caused deviations in the initial plan in order to carry out the intended purpose of the mission. Innovation in the form of the use of SS-11 missiles came from the trust put in the squadron to execute their given tasks with the tools and leadership at their disposal. Maintainers amended maintenance practices to facilitate the growing requirement for higher tempo operations. The flexibility provided during planning allowed aircrews to adapt while mitigating the risks associated with being totally unprepared. This created the circumstances for both 656 AAC and the British task force to succeed in the liberation of the Falkland Islands.

Structuring Mission Command for Productive Initiative

"Divers are the situations under which an officer has to act on the basis of his own view of the situation. It would be wrong if he had to wait for orders at times when no orders can be given. But most productive are his actions when he acts within the framework of his senior commander's intent" from Generalfeldmarschall Helmuth von Moltke, *Taktischstrategische Aufsätze aus den Jahren 1857 bis 1871*.

As stated in the British Army Doctrine Publication Operations, land forces and the environments they operate in, are complex.²¹⁷ There are numerous units involved, each with their own respective headquarters and subordinate headquarters. It is an immense challenge to provide cohesion and effective communications between each of

²¹⁷Ministry of Defence, *Army Doctrine Publication: Operations*, 6-10.

the units, especially when large areas of operations exist. This is why the concept of mission command is important as it is “a philosophy of command, with centralised intent and decentralised execution, that is particularly suitable for complex, dynamic, and adversarial situations.”²¹⁸ It strives to provide the overall commander with the ability to coordinate the actions of his subordinates while promoting freedom of action, innovation, and initiative.

This description of mission command leads many to incorrectly summarize that the concept is a corollary to the abrogation of responsibility. It is far more complicated than simply provide laissez-faire direction. It requires establishing and practicing mission command norms before the actual need to execute. It is useful to examine the requirements for mission command through the concept of Fighting Power. The physical component manifested through force structure, equipment, and training provides the actual units to execute missions. Contained within this, is the command and control structures required to plan and coordinate operations. This is the same for the equipment needed to connect subordinate units with their commanders, those adjacent to them, and the higher headquarters as well. Training helps to foster trust and ensures that the respective headquarters can properly plan and execute the required missions in a timely and effective manner. A high level of proficiency for the use of the resources is developed and maintained until such a time requires their use.

The conceptual component provides one of the systems for the execution of mission command. Doctrine looks at how to think, not what to think, providing a framework around which the force is structured and will commonly operate during their

²¹⁸Ibid., 6-11.

designated missions. It provides common concepts and verbiage to ensure a mutual understanding exists for the units operating. Mission orders within the component take the associated doctrine and adapt it to the current operating environment experienced. This provides subordinates with the commander's intent, the plan for execution, and their designated resources for additional flexibility in execution.

It is interplay between—and understanding of—an organization's structure, systems, and culture that provides the bedrock upon which mission command can be successfully implemented. 656 AAC's success stems from a skillful interplay, facilitating small unit leaders within the organization to be innovative and to take the initiative when needed. Commanders and their staffs need to understand this interaction to craft a unit climate where flexibility creates adaptability and leads to mission accomplishment in difficult operational environments.

APPENDIX A

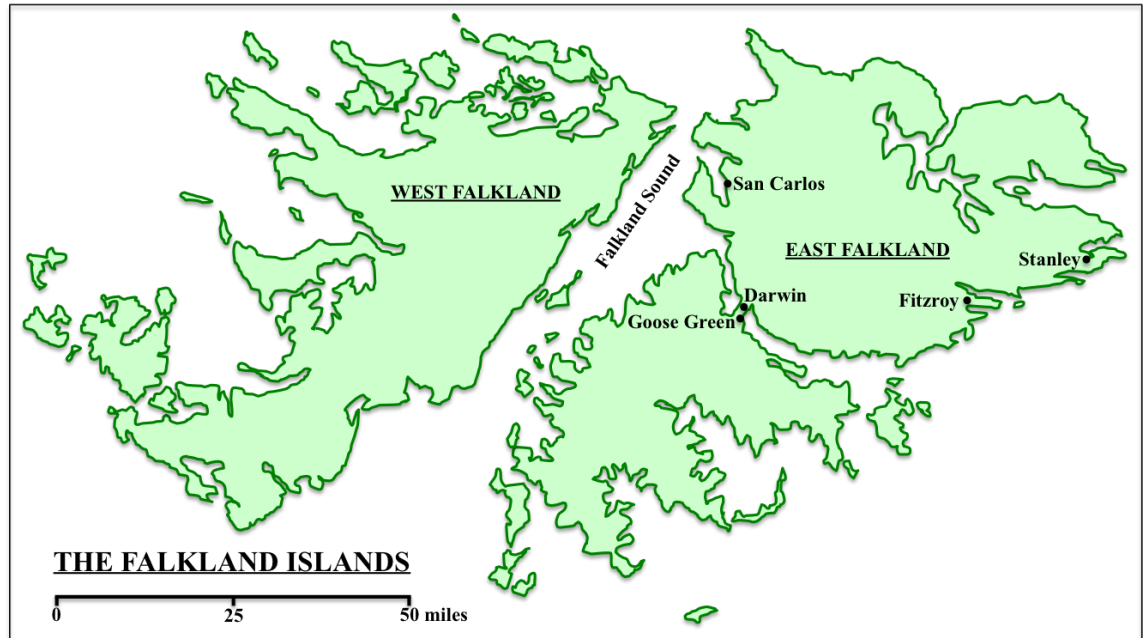
AIRCRAFT STATISTICS

Aircraft	AH1 Scout	SA341 Gazelle	IA58 Pucara
Crew			
Flight Crew	2 (Pilot, Observer)	1 (Pilot)	2 (Pilot, Co-pilot)
Passengers	3-4	4	0
Weights			
Empty	3,232 lb (1,465 kg)	2,198 lb (997 kg)	8,862 lb (4,020 kg)
Takeoff (Max)	5,300 lb (2,405 kg)	4,410 lb (2,000 kg)	14,991 lb (6,800 kg)
Performance			
<u>Speed</u>			
Maximum	114 kts (131 mph)	140 kts (161 mph)	259 kts (298 mph)
Cruise	106 kts (122 mph)	125 kts (144 mph)	232 kts (267 mph)
Rate of Climb	1,670 ft/min (509 m/min)	1,535 ft/min (468 m/min)	3,543 ft/min (1,080 m/min)
<u>Ceiling</u>	13,370 ft (4,075 m)	13,450 ft (4,100 m)	32,084 ft (10,000 m)
Hover IGE	15,600 ft (4,755 m)	9,975 ft (3,040 m)	n/a
Hover OGE	10,200 ft (3,109 m)	7,775 ft (2,370 m)	n/a
Range	275 nm (317 mi)	383 nm (441 mi)	121 - 189 nm

Source: Military Periscope.com, <https://www.militaryperiscope.com/weapons/aircraft/attack/w0000320.html> (accessed 9 May 2014).

APPENDIX B

FALKLAND ISLANDS MAP



Source: Created by author.

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